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THE

MINERAL CONCHOLOGY

OF

GREAT BRITAIN;

OR

COLOURED FIGURES AND DESCRIPTIONS

OF THOSE

REMAINS OF TESTACEOUS ANIMALS

OR

Shells,

WHICH HAVE BEEN PRESERVED AT VARIOUS TIMES AND DEPTHS IN THE EARTH.

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DESIGNER OF ENGLISH BOTANY, &c.

Many, O Lord my God, are thy wonderful works which thou hast done; they cannot be reckoned up in order to thee: if I would declare and speak of them, they are more than can be numbered.

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MDCCCXXI.

PECTEN cornea.

TAB. CCIV.

SPEC. CHAR. Orbicular, much depressed, smooth; ears small, nearly equal; two obtuse teeth near the ears within each valve.

A THIN fragile shell whose valves are very nearly alike, being both of them very flat and shining: the beak is acute; the ears prominent and well defined; at the base of each within the valves is an oblong blunt tooth: a slight difference observable in the relative position of these teeth points out the two valves most readily. Well preserved individuals retain some traces of the original markings; such are of a deep brown colour with a horn-like transparency on the sides, and of an opaque pale brown from the front to the beak, near which the colours are very distinct: other specimens are altogether of a pale brown colour, these are the most tender.

Found in the Blue Marle stratum below high water mark, at Stubbington, in Hampshire. It has much affinity with Pecten Pleuronectes, but is more slender, and otherways distinct. Perfect specimens are very rare, and difficult to preserve; I am therefore much obliged to Mr. Holloways for the pains he has taken to procure me such as exhibit clearly all the characters.

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PECTEN obscura.

TAB. CCV.---*Fig.* 1.

SPEC. CHAR. Sub-orbicular, depressed, with obscure arched longitudinal rugæ upon the surface ; ears large.

SOMEWHAT longer than wide : the surface is dull, almost smooth ; but it has some indications of diverging furrows. The edge is thick.

Occurs upon the sandy Limestone slate of Stonesfield, near Oxford. My specimen was forwarded to me long since by Dr. Williams.

PECTEN lens.

TAB. CCV.—*Figs.* 2 *and* 3.

SPEC. CHAR. Orbicular, convex; surface marked with diverging arched striæ; striæ deeply punctured.

NEARLY lenticular, but thickest near the beaks; the shell seems to be tender, as its remains are much broken: the ears are not perfect in either of my specimens.

A produce of the forest marble near Oxford.

PECTEN laminata.

TAB. CCV.—*Fig.* 4.

Spec. Char. Suborbicular, depressed, striated; striæ arched, diverging: ears triangular, unequal; the largest plaited.

The striæ are slightly undulated; to the naked eye they appear smooth, but when carefully examined with a lense, minute lines may be traced across them. The plaits upon the ear form a strong character, whence the name.

In shelly Limestone (Cornbrash) at Chatley Lodge, in Somersetshire.

PECTEN arcuata.

TAB. CCV.—*Figs.* 5 *and* 7.

Spec. Char. Orbicular, depressed, with arched punctured and diverging striæ upon the surface: ears large; the side beneath the largest is arched.

A small shell, prettily marked with arched, dotted, and sometimes forked furrows. The ears are dissimilar; the largest is quadrangular; they are both punctured.

I have a single valve of this (fig. 7.) in sandstone, along with Ostrea gregarea (tab. 111. f. 1 & 3.) from Devizes, and another upon Coral rag (fig. 5.) but not so perfect.

PECTEN similis.

TAB. CCV.—*Fig.* 6.

SPEC. CHAR. Suborbicular, depressed, striated; striæ arched, diverging; ears unequal; sides straight.

THIS differs from the last in having a straight side beneath the larger ear, in being longer, and having no dots in the striæ; but at first sight it much resembles it.

Upon shelly Limestone, probably belonging to the Forest Marble, from Shotover Hill, Oxford.

PECTEN rigida.

TAB. CCV.—*Fig.* 8.

SPEC. CHAR. Orbicular, depressed; strongly striated; striæ arched, diverging; ears large, unequal, decussated.

A LARGER shell than the last, which it resembles, but is shorter, and has fewer and deeper striæ.

From Castle Combe, in Forest Marble, by favour of the Rev. H. Steinhauer.

CUCULLÆA oblonga.

TAB. CCVI.---*Figs.* 1 *and* 2.

Syn. Cucullæa oblonga. *Miller, MSS.*

Spec. Char. Transversely oblong, gibbose, longitudinally striated; anterior side wedge-shaped; lines beneath the cartilage numerous.

The width of this Cucullæa is above twice its length: the front inclines slightly to the posterior side, which is small: the striæ upon the surface are numerous, irregular, and elevated: the edge is entire. The beaks are elegantly incurved; the flat rhomboidal space between them is marked with from 9 to 12 parallel lozenges.

The finest specimen of this shell as yet obtained is the pair figured: it belongs to a valuable collection that has been made with much labour and perseverance by Mr. J. S. Miller, of Bristol. G. W. Braikenridge, Esq. has also sent me a good example. They were both found at Dundry in the inferior Oolite, holding grains of iron ore. The single valve represented was sent me by the Rev. Mr. Steinhauer, from Cross Hands: it is in the same kind of stone. I regret that a single valve exhibiting the teeth more perfectly, which I have just received from Mr. Miller, did not arrive time enough for me to alter the figure. It shews the lateral plates bent at right angles near their bases where they approach the middle of the hinge. Mr. Steinhauer has also sent me fragments from little Sodbury.

The name is that Mr. Miller has given it in his letters, and in a catalogue of some valuable shells he has kindly lent me for publication.

CUCULLÆA decussata.

TAB. CCVI.---*Figs.* 3 *and* 4.

Syn. Cucullæa decussata. *Parkinson III.* 171.

Spec. Char. Transversely ovate; gibbose, with flattish longitudinal ridges; anterior side angular; lines beneath the cartilage few.

About one-fifth wider than long: the ridges are but little elevated, and are decussated by fine and close lines of growth: the interior margin in old shells is crenulated: the teeth of the hinge, when they are not worn, are striated or crenulated upon their sides, as I have observed when speaking of C. glabra, (Vol. I. p. 152, t. 67.)

I received this from the same gentleman who sent Mr. Parkinson the specimens he describes, Mr. Francis Crow, who collected them all near Faversham, in Kent: they are silicious casts, with a small portion of the shell remaining.

CUCULLÆA carinata.

TAB. CCVII.—*Fig.* 1.

Spec. Char. Obliquely cuneiform, smooth; anterior side pointed, and distinguished by a ridge running up to the beak.

Length and breadth nearly equal; but the ridge that bounds the anterior side being very oblique, is one sixth longer than the width. The acuteness of the angle made by the anterior side, with the remaining surface, is sufficient to distinguish this from C. glabra (tab. 67.) the smoothness of the surface may arise from wear.

A silicious cast from Black Down.

CUCULLÆA fibrosa.

TAB. CCVII.—*Fig.* 2.

Spec. Char. Obovate, gibbose, with numerous logitudinal elevated striæ upon the surface; anterior margin straight, prominent near the hinge.

Length less than the width; in its general aspect much resembling C. glabra, but it is less oblique, and the anterior side is more gradually rounded unto the middle; the lines upon the surface are sharp, and frequently crossed by the lines of growth.

Cast in Calcedony, in a sandstone holding mica and green sand; found at Black Down, and transmitted to me by Miss E. Hill.

TRIGONIA eccentrica.

TAB. CCVIII.—*Figs.* 1 and 2.

Syn. Trigonia eccentrica. *Parkinson, vol.* iii. *p.* 175. *tab.* 12. *f.* 5.

Spec. Char. Transversely ovate, convex; anterior side produced, posterior side round, with oblique undulating ridges on the surface.

The length is only half the width; the edge is very regularly curved till it comes to the produced part of the anterior side, where it bends a little forward, and then turns suddenly back. The ridges are straight and transverse near the beaks where they almost cross the shell; those placed nearer the front are confined to the posterior side, are undulated, and are crossed by the lines of growth.

I have given two views of one valve, which was found on Black Down by the Rev. J. H. Steinhauer; it is silex, stained perhaps by vegetable matter. I have the opposite valve imperfect from Hembury Fort, Devonshire, through the hands of Mr. Goodhall: also silicious.

TRIGONA affinis.

TAB. CCVIII.—*Fig.* 3.

Syn. Trigona affinis. *Miller, MSS.*

Spec. Char. Transverse, oval, gibbose, half covered by transverse ridges.

Very thick, regularly elliptical, about one-third wider than long, and remarkable for the slight protuberance of the beak, behind which there is not that cavity observable in Corbula, and many other shells. The transverse

ridges are very uniform, and somewhat inversely imbricated. The anterior half is smooth.

The handsome mass of silicized shells, upon which this rare species rests, was sent me for public use by Mr. Miller; it is named affinis in the catalogue of his collection, from its resemblance, although distant, to Trigonia sinuata of Parkinson.

CORBULA. *Bruguière. La Marck.*

Gen. Char. Shell with two dissimilar unequal-sided valves; sub-transverse. Hinge teeth two, one in each valve; ligament internal.

One of the most easily defined genera, being well distinguished by the dissimilarity of the valves, of which one is generally so small as to be included in the other, and by the single recurved conical tooth in the larger valve, and a corresponding pit with an irregular tooth in the other: both valves are more or less gibbose, with incurved beaks, a projecting and sometimes recurved anterior side. Several species, both fossil and recent, are described; some are slender, others very stout shells.

CORBULA gigantea.

TAB. CCIX.---*Figs. 5, 6, and 7.*

Spec. Char. Gibbose, when young suborbicular, when old transversely oblong; anterior side produced, recurved; surface concentrically furrowed near the beaks; posterior side beset with short spines.

Young shells have the furrows and ribs between, which are equal and very regular, extended over the whole surface of both valves; they are broadest over the middle, and gradually diminish to the sides: as the shell increases in size, the ribs are closer, and less prominent towards the front, and at length disappear: when full grown, short obtuse spines placed in longitudinal rows occupy

the posterior side and part of the front. The posterior side is very concave, and separated by an obtuse ridge. The substance is very thin, except that of the hinge, which is strong.

This shell is abundant in the sandstone, called in Devonshire, Whetstone: it is mentioned by Parkinson in his 3d Vol. p. 226. I have received it in various stages of growth from my kind and amiable correspondent, Miss E. Hill.

CORBULA lævigata.

TAB. CCIX.---*Figs.* 1 *and* 2.

Spec. Char. Orbicular, gibbose, smooth, and thin; beaks prominent, incurved.

A very smooth regularly convex thin shell, scarcely wider than long. I have only seen one, that is the smaller valve, and only an imperfect specimen of that; but it shews the hinge, in which it exactly agrees with C. gigantea. The tooth in this valve in both these species is situated upon the posterior edge of the pit that receives the tooth of the other valve, in which they differ from other Corbulæ, although in some of them there are traces of such a disposition.

From Black Down, by favour of Miss E. Hill.

CORBULA globosa.

TAB. CCIX.---*Fig.* 3.

Spec. Char. Globose, smooth; anterior side of the larger valve produced into a lip; truncated; beaks equal.

A very small shell, equal in thickness to its length; the posterior side is round, the anterior obscurely trun-

cated, and the front obtuse: in many specimens the margin of the larger valve, which is always a little bent, is protruded in the form of a lip beyond the anterior side of the other valve: I say in many specimens, because I have a considerable number that differ in no other respect than the want of this lip; they can hardly be younger, as they are mostly of the same, or even of a larger size.

Very abundant in the blue clay of Highgate Hill, frequently in clusters; and I have never met with a divided pair.

CORBULA Pisum.

TAB. CCIX.---*Fig.* 4.

Spec. Char. Subglobose, irregular, concentrically furrowed; anterior side slightly truncated; margin of one valve produced; beaks unequal.

A rugged looking shell; the beak of the larger valve is very prominent, even ventricose, especially in old subjects; the expanded margin extends beyond the anterior side of the smaller valve, and a considerable part of the front. The furrows are commonly worn away; which circumstance, together with some irregularity in the shape, give it the aspect of a shell that inhabits holes in stone.

Several of my correspondents have favoured me with this from Barton and Hordle Cliffs: among others Miss Bennett, the Rev. Mr. Iremonger, and the Rev. Mr. Bingley, wherefore I suppose it is a very common species there, although not noticed by Brander.

CORBULA revoluta.

TAB. CCIX.---*Figs.* 8 to 13.

Syn. Tellina revoluta. *Brocchi* 516. *tab.* 12. *f.* 6.

Spec. Char. Transversely oblong, tumid, transversely furrowed; anterior side produced, truncated, with a carina running to the beak; margin of the larger valve prominent, inflected; beaks unequal.

Var. β (costata) transverse furrows few, deep; anterior side rather pointed, (figs. 11, 12, and 13.)

The width is frequently twice the length; the edge of the lesser valve is almost wholly enclosed in the larger, the margin of which at the front is expanded, and rather bent inwards, whence the name given by Brocchi. The anterior side of the larger valve is extended in the form of a truncated beak, but liable, as well as the general form, to such irregularities as are common to shells which inhabit holes and cracks in rocks; the furrows are numerous and sharp, except in var. β, which has them rounded, and the ridges between them sharp. The beak of the larger valve is very gibbose in old shells.

From Barton Cliff by favour of the Rev. Mr. Bingley, in plenty; some have the furrows so irregular that it is difficult to say to which variety they belong, otherwise I should have been led by the general form to consider the var. β a distinct species.

MODIOLA subcarinata?

TAB. CCX.---*Fig.* 1.

SYN. M. subcarinata? *La Marck, Foss. de Paris,* 191. *Annales du Muséum d'Histoire Naturelle, Vol. VI. p.* 122. *V. IX. tab.* 17. *f.* 10.

SPEC. CHAR. Oblong, smooth, gibbose; anterior side keel formed, rather obtuse; posterior lobe convex; front concave.

THE margin of the front is arched inwards in this shell; whereas in M. modiolus of Linn. that edge is straight. The length, taking the measure obliquely, is above twice the width, and greater than in M. modiolus of Linn. It is often strongly marked by the lines of growth, and is very pearly beneath a thin brown epidermis.

This is probably not the Modiola subcarinata of La Marck, although it agrees with the description; but I must consider it as such until I obtain the means of distinguishing them. It may probably be one of the varieties of Mytillus modiolus of Brocchi; but as that author, who is apt to treat fossil species as only varieties of recent shells, does so in the present instance, it is not easy to determine this point. The specimens figured are the produce of Highgate Hill. The large one has been much broken by pressure, but the small one appears to retain its original form undisguised.

MODIOLA bipartita.

TAB. CCX.---*Figs.* 3 *and* 4.

SPEC. CHAR. Elongated, smooth, rather gibbose; anterior side obtuse, suddenly raised above the posterior; posterior lobe irregular.

NEARLY related in general form to the last, but readily distinguished, by the separation of the posterior lobe

from the remainder of the shell by a kind of step particularly prominent near the beak; the length is greater also; the carinated form of the beak not so evident; and the front edge has two or three waves in place of a regular curve. The shell seems to be very thin and not pearly.

Casts of this in ferruginous indurated marl, with nearly all the shelly remains worn off, have been forwarded to me by Miss E. Hill, who obtained them from Lantrissent near Cardiff. Similar casts occur at Osmington; he plate contains two views of one of these that was given me by Miss Benett. Fig. 3 is from an imperfect cast in ferruginous sand, from Parkham Park, in Sussex: I received it from G. A. Mantell, Esq

MODIOLA æqualis.

TAB. CCX.---*Fig.* 2.

Spec. Char. Oblong, convex, smooth, anterior lobe large, obscurely defined.

The regular curvature of the margin which presents no angle, is a striking feature in this Modiola: the two ends are nearly equal in width, and the posterior lobe almost as large as the remainder of the valve, and very gradually united with it. The length is about twice the width.

A cast in loose ferruginous sandstone, from Parkham Park, in Sussex, by G. A. Mantell, Esq.

MODIOLA minima.

TAB. CCX.---*Figs.* 5, 6, *and* 7.

Spec. Char. Ovato-subtriangular, smooth; front nearly straight, ends rounded, posterior lobe small, distinct.

Only half as long again as wide: it is very broad anteriorly, and has small beaks; the margin forms a prominent angle with the hinge line at their junction.

This occurs in a grey argillacious Limestone; the largest was sent me from Taunton, by my friend R. Hare, Esq. One of the small ones was found near Belfast, by Dr. M'Donnel, along with Gryphites.

MODIOLA cuneata.

TAB. CCXI.---*Fig.* 1.

Spec. Char. Elongated, convex, smooth; anterior part cuneated; back arched; front slightly concave; posterior side distinct, convex.

About twice as long as wide; most gibbose near the beaks, and gradually depressed towards the forward end in the form of a wedge.

From the inferior Oolite of Somersetshire.

MODIOLA gibbosa.

TAB. CCXI.---*Fig.* 2.

Syn. Modiola anatina. *Smith Strat. System* 89.

Spec. Char. Elongated, reniform, very gibbose, smooth; back broad, arched.

Nearly three times as long as wide; the depth of each valve is equal to its width. The end is obtuse, not

wedge-shaped as in the last, a character that distinguishes it in all ages. The posterior lobe is well defined and gibbose.

I have several specimens of this shell from Bradford, Wilts, and from Claverton Hill, near Bath. I believe it belongs to Smith's Fullers'-earth Rock.

MODIOLA reniformis.

TAB. CCXI.---*Fig.* 3.

SPEC. CHAR. Oblong, sub-reniform, smooth; anterior lobe slightly expanded; posterior lobe small.

A MORE obtuse and less curved shell than the last, and comparatively compressed: the length is about twice the width.

This shell, of which I have seen but one specimen, is said to be from the inferior Oolite, near Bath.

MODIOLA imbricata.

TAB. CCXII.---*Figs.* 1 *and* 3.

SPEC. CHAR. Oval, elongated; with imbricated ridges upon the surface; back angular, front concave.

THIS is a slightly compressed shell; about twice as long as broad; the ridges upon the surface are the edges of the shell left prominent after each successive addition to its margin during its growth. The anterior lobe forms a slightly elevated ridge extending to the beak.

The Rev. T. O. Marsh sent me the specimen (fig. 1) from Felmarsham, near Bedford. I have had larger casts brought me from Milton Ernest, also in Bedfordshire, by Mr. Goodhall, who has kindly favoured me with several shells obtained by him in the course of a short tour. Fig. 3 is from a much compressed and broken shell, taken out of clayey Limestone, found in an alluvial deposit in the parish of Gisleham, near Lowestoff, in Suffolk, by the friendly Mr. Thurtell.

MODIOLA Hillana.

TAB. CCXII.---*Fig.* 2.

SPEC. CHAR. Depressed, elongato-ovate, concentrically striated; posterior end narrow; front slightly concave; posterior lobe obscure.

AN elegantly formed shell, rather more than twice as long as wide; the back forms a kind of keel from the centre of which the shell tapers towards the beaks; these are not very prominent; and together with the small

convexity of the posterior lobe, give that end a narrow contour. The striæ are obtuse ridges coinciding with the lines of growth; they are smooth.

Miss E. Hill, whose kindness I have often had occasion to acknowledge, sent me this shell from Pickeridge Hill, near Roundsford Park, Taunton. It is found in a grey argillacious Limestone, that is in some parts so soft and loose that the shells may be picked out of it with ease; in other parts the stone is firm, and the shell adheres strongly to it, in which case the surface of the shell that is exposed by fracture has a glistening velvety lustre, arising from its crystalline structure. The specimens are frequently narrower than the figure.

MODIOLA aspera.

TAB. CCXII.—*Fig.* 4.

Spec. Char. Ovate, elongated, posteriorly pointed; very gibbose, longitudinally striated; striæ elevated, rough, very numerous; posterior lobe obscure, wrinkled, small.

The small and nearly flat posterior lobe leaves the beaked end of this Modiola so small as to give it much of the contour of a Mytillus. The depth of the two valves together is greater than the width, and the length is twice the depth. The roughness of the striæ proceeds from minute elevated scales, that are most conspicuous near the margin of the shell, and are nearly obliterated towards the beaks.

For this beautiful shell I am indebted to Mr. Goodhall, who brought it from a pit in Gregory's Land, at Felmarsham, near Bedford.

AMMONITES Sowerbii.

TAB. CCXIII.

Syn. A. Sowerbii. *Miller MSS. Catalogues.*

Spec. Char. Discoid, carinated, with about eight spiniform tubercles upon each whorl; keel defined, entire; aperture elliptical.

Var. β aperture circular, keel sometimes impressed.

Volutions about four, the inner ones concealed to the bases of the tubercles; the outer part of the volutions has many gentle undulations; the inner part is even, except that the base of each tubercle is extended towards the centre in an obtuse ridge. The keel nearly separated from the body of the shell; it is round and entire.

In var. β the ridges from the bases of the tubercles are more prominent, and the keel sometimes so far sunk as to have a furrow on each side of it. The inner whorls of var. α appear to be more gibbose than the outer ones.

Mr. Miller considers the shell figured as one of his rarest specimens: his collection has also to boast of several smaller specimens, belonging to var. β, which vary in the gibbosity of the whorls; they were all found at Dundry, in the Inferior Oolite.

LIMA rudis.

TAB. CCXIV.---*Fig.* 1.

SPEC. CHAR. Obovate, oblique, with seven longitudinal costæ; anterior ear open, with thickened lobes.

SOMEWHAT longer than wide; the surface is convex; the costæ are large and rugged: one of the ears is small; the other long, with thick and reflected edges to its valves.

This is a rugged specimen of apparently a rugged shell; it was picked up by my good friend Mrs. Gent, at Calne.

LIMA antiquata.

TAB. CCXIV.—*Fig.* 2.

SPEC. CHAR. Elliptical, depressed, coarsely striated; anterior ear deeply wrinkled, open.

THE striæ are numerous, close, irregular, and ragged towards the margin: the width is about two-thirds the length. The smaller ear is striated like the rest of the shell, and closed.

The shell from which this is taken belongs to Mr. Miller; it was found in the Lias at Frethern, in Gloucestershire.

TRIGONIA alæformis.

TAB. CCXV.

Syn. T. aliformis. *Parkinson III.* 176. *t. XII. f.* 9.

Spec. Char. Wing-formed; anterior side produced, truncated, with a broad compressed ridge extended to the beak; posterior side costated, rounded, costæ many, thick, irregularly crenulated, oblique, recurved, and attenuated towards the ridge on the anterior side where they terminate.

Upon the upper part of the anterior side, above the ridge, is a concave surface ornamented with a few irregularly crenulated ribs, that extend across the ridge near the beak, and join attenuated ends of the other costæ, but are gradually lost upon the produced part of the side. The internal margin has a short groove corresponding to each of the external ribs, and two canals beneath the flat space upon the produced beak-like side, which are very evident in relief upon the casts, see fig. 2.

A long known shell among the siliceous fossils, often so admirably preserved in form in the green sand. The individuals represented in figures 1, 3, and 4, are selected from Mr. Miller's choice collection: fig. 4 is remarkable, as it exhibits the great gibbosity of the young subject. Fig. 2 is taken from a cast of the inside, in ferruginous sand, which occurs in Parkham Park, Sussex; I am indebted to G. A. Mantell, Esq. for it; it appears to be abundant, as many are included in the same mass: there are casts of the outsides also, allowing spaces

for the substance of the shells, of which there are no vestiges remaining. Other genera are often included, and to be comprehended also by casts only.

The existence of these hollow casts, contrary to the siliceous forms of the shells found in the green sand, is a curious fact that requires to be further attended to : something similar occurs among the Crag fossils.

HAMITES spinulosus.
TAB. CCXVI.---*Fig.* 1.

Dentalium ? spinulosum. *Miller's MSS. Catal.*

Spec. Char. Depressed, undulations regular, every other one armed with two sharp spines; opening elliptical; curvature very gradual.

The undulations upon the sides of this elegant Hamite are all equally prominent, and almost disappear upon the narrow back. The spines are situated along each side near the front; they diverge a little. The curve, as exhibited by a small part only of an entire shell, is nearly as wide as the segment of a circle.

A delicate specimen of this shell was in the valuable envoy from Mr. Miller, out of which I have already figured several rarities: it is a cast in transparent Calcedony, with an opaque pulverulent crust. Although it be transparent, and evidently hollow, it does not shew any signs of Septa, but it may only be a cast of the outside, or as Mr. Miller observes, the chamber beyond the last septum. The deficiency has, however, induced Mr. Miller to call it a Dentalium for the present. It was found on Blackdown.

HAMITES spiniger.
TAB. CCXVI.---*Fig.* 2.

Spec. Char. Depressed; undulations many, slender; two rows of sharp tubercles upon each side, those nearest the front largest; curvature gradual.

Numerous, slightly elevated, irregular rings characterize this species: the anterior tubercles collect, into each of their bases, several of the undulations, which sometimes run a little way up them. The mouth is oval.

Found in marle, in the neighbourhood of Folkstone, by Mr. Gibbs. The pearly crust is nearly obliterated.

HAMITES tuberculatus.

TAB. CCXVI.---*Figs.* 4 *and* 5.

SPEC. CHAR. Depressed, undulations unequal, every third one largest, with two tubercles on each side, the lateral ones obscure; curvature gradual.

Two small rings between each of the tuberculated ones, almost constantly occur upon this; the tubercles are obtuse; in other respects it nearly resembles the last.

From Folkstone, by Mr. Gibbs.

HAMITES turgidus.

TAB. CCXVI.---*Fig.* 6.

SPEC. CHAR. Depressed; front irregularly swelled; undulations regular, disappearing over the back; two rows of obscure tubercles near the front; curvature rather sudden.

WHETHER the irregular swellings on the front be accidental or not, the single row of tubercles on each side of it are sufficient to distinguish this species: they are placed upon every other ring, and are small.

A pyritous cast; from Folkstone with the last.

HAMITES nodosus.

TAB. CCXVI.---*Fig.* 3.

SPEC. CHAR. Nearly round, undulations regular; two rows of obtuse tubercles upon the front, each tubercle placed upon two undulations; aperture obovate.

MORE gibbose than any other tuberculated species; the tubercles are so large that they extend over two of the undulations or rings, which are not so numerous as in some others, and leave a simple one between each pair.

A cast in which the septa are coated by crystallized Pyrites; the pearly shell remains outside. From Folkstone.

NERITA.

Gen. Char. A subglobose univalve, obliquely depressed beneath; columella solid, subtransverse, flattened, with a linear, sometimes toothed edge; aperture semicircular, closed by an operculum.

Both marine and fresh-water animals possess shells of this genus; but those of the fresh-water hitherto known have no teeth upon the edge of the expanded columella. Neritæ are generally strong shells with large apertures; they have but few whorls, the last of which is commonly very large. The aperture is semicircular in consequence of its being half closed by the flattened columella, which forms the character of the genus. The recent species, and some even of the fossil ones, are ornamented with various colours, but they are seldom bright, and in general few, and disposed in small markings.

NERITA lævigata.

TAB. CCXVII.---*Fig.* 1.

Spec. Char. Pointed, smooth; spire conical, with straight sides; base convex.

Remarkably smooth, shining; the aperture is much wider than long; around the centre of the last whorl is a very obscure sulcus.

From the inferior Oolite at Dundry, Mr. Miller's collection. The specimens do not exhibit the columella.

NERITA sinuosa.

TAB. CCXVII.---*Fig.* 2.

Spec. Char. Obtuse, uneven ; spire short, with convex whorls ; aperture with a rounded sinus near the base, and an angular sinus above the middle.

Around the base of the last whorl is a kind of lobe, that terminates in a sinus in the edge of the aperture. In old shells the last formed turn is obtusely carinated, and they have a notch in the lip. The whole surface is strongly marked with lines of growth, that shew the gradual increase of this notch as they approach the edge of the aperture. The columella is broad and flat, but I have not been able to expose enough to learn whether the edge be toothed or not.

Several specimens have been in my cabinet four or five years, for which I am indebted to Miss Benett, who collected them at Chilmarsh, near Tisbury, Wilts. They are converted into crystallized carbonate of Lime, and are filled with chalky marl, mixed with white and green sand.

MELANEA lineata.

TAB. CCXVIII.---*Fig.* 1.

SPEC. CHAR. Acuminated, finely striated longitudinally; aperture angular above; volutions about nine.

THE sides of the spire are straight, excepting a very slight contraction towards the upper part of each whorl. The striæ are very fine, regular, and elegantly bent to the form of the lip. The length is above four times the diameter of the last turn.

From Dundry, by favour of G. W. Braikenridge, Esq.

MELANEA constricta.

TAB. CCXVIII.---*Fig.* 2.

SYN. Conchyliolithus Turbinites? constrictus. *Martin Pet. Derb. Vol. I. tab.* 38, *f.* 3.

SPEC. CHAR. Turreted, smooth; volutions 8 or 10; convex below, contracted above, with an addressed crenated margin.

ABOUT three times as long as wide, pointed; the crenated margin has somewhat the appearance of a fringe, from its width, and the length, and fineness of the crenulations: the aperture is broken, but it should seem to have an angle above.

I have exhibited two views of the same specimen Mr. Martin figured, which I had from his widow. Martin observes that it is found at Tisdewell, in Derbyshire, but not common.

CIRRUS nodosus.

TAB. CCXIX.---*Figs.* 1, 2, *and* 4.

C. nodosus. *Min. Con. Vol. II. p.* 94, *tab.* 141, *fig.* 2.

Spec. Char. Conical, acuminated ; or discoid, with an acuminated spiral umbo ; spire reversed ; whorls many, with two rows of longitudinally extended tubercles crossed by numerous small carinæ.

The description formerly given of C. nodosus applies to the cast of the inside, which differs considerably from the outside, although it retains vestiges of the most prominent marks. Externally it is a rugose shell, a few of the numerous small carinæ becoming very prominent and sharp as they pass over the tubercles, and divide the upper row almost into two. Between the transverse carinæ fine regular elevated striæ parallel to the aperture are distinctly visible, especially upon the lower part of each whorl. The whorls that occupy the smaller part of the spire are nearly flat, with a crenulated keel at the lower edge. The most remarkable circumstance attending this shell, and which assimulates it to the genus Serpula, is the variable form of the spire, which is often a small pointed cone in the centre of a discoid base, consisting of two or three of the latter volutions : sometimes the conical part is larger than the discoid part, containing only one or two turns : and lastly, all the whorls unite to form a regular pointed cone, such as the figure formerly given.

I am indebted to Mr. Miller's indefatigable researches for a series of specimens illustrating the above observations, which are very interesting, and not a little perplexing, since they tend to connect the Generæ Cirrus

and Euomphalus together, the conical part of this shell belonging to the one, and the discoid part to the other. I have also some reason for suspecting that Euomphalus pentangulatus (tab. 45.) is liable to a similar variation by which it approaches to Cirrus acutus (tab. 141, f. 1.) Should this suspicion be confirmed by a series of specimens, one of the generæ must be expunged.

The specimens are from the inferior Oolite at Dundry.

CIRRUS Leachi.

TAB. CCXIX.—*Fig.* 3.

Syn. C. Leachi. *Miller's MSS.*

Spec. Char. Conical, longitudinally striated; whorls many, with several rows of tubercles crossd by numerous small carinæ; upper row of tubercles spiniform, compressed.

This differs from the last in having a row of long compressed spines around the upper part of each whorl.

The unique specimen from which I have given the sketch at fig. 3, is so mutilated, and so united with the stone, that a correct notion can hardly be obtained of it. It is possible that the length of the spines may be variable; and consequently, some doubts may fairly be entertained of the propriety of treating it as a species. It is in Mr. Miller's cabinet, who kindly lent it me, with the following observation in his catalogue:

"C. Leachi.—I named this after my esteemed friend, Dr. W. E. Leach, whose zeal to promote enquiries in Natural History cannot be praised sufficiently. Having been the first who brought C. nodosus into notice, I wish to preserve his name in this genus."—With Mr. Miller's sentiments I perfectly coincide; and therefore gladly publish them. There are some vestiges of a second specimen of this, along with the larger specimen of Trochus sulcatus, (tab. 220, fig. 3.) on the side not shewn in the figure.

TROCHUS fasciatus.

TAB. CCXX.---*Fig.* 1.

SPEC. CHAR. Conical, umbilicate, decussato-striated; volutions slightly convex, with a band around their middle; base flattish; aperture quadrangular.

THE width of the base is equal to the height; the transverse striæ, or rather ridges, are the most prominent; the longitudinal ones diverge from the central band both ways: the columella seems to have a single plait along it, and is tubular.

In G. W. Braikenridge, Esq.'s cabinet: found in the inferior Oolite at Dundry.

TROCHUS granulatus.

TAB. CCXX.---*Fig.* 2.

SPEC. CHAR. Conical, very short, granulated, whorls rather convex above, with a band along the middle; base convex, in part nearly smooth.

THE granulated surface is the result of decussating furrows, which vary in depth and number in different individuals; they are generally deepest near the margin: the height is about half the width: it appears to have a small umbilicus, which probably led Mr. Miller to consider it an Euomphalus, from which the columella and left lip of the aperture clearly distinguish it.

In Mr. Miller's cabinet; from Dundry.

TROCHUS sulcatus.

TAB. CCXX.---*Fig.* 3.

Syn. T. sulcatus. *Miller's MSS.*

Spec. Char. Conical, short, whorls convex, finely striated, with a sulcus around the middle; base flattish, umbilicate ?

In the latter turns of the spire, the transverse striæ are confined to the marginal parts below the furrow; while at the apex they are sharp all over the whorls, and are crossed near the superior margin by numerous undulations: the whole surface is covered by fine lines of growth, diverging from the sulcus, which itself is crossed by minute striæ. The columella being covered by stone, the existence of an umbilicus is doubtful, but there are some indications of one.

Preserved in the inferior Oolite of Dundry: from Mr. Miller's collection.

TROCHUS ornatus.

TAB. CCXXI.---*Fig.* 1.

SPEC. CHAR. Conical, depressed, with concentric furrows, and diverging striæ; whorls above depressed, with many tubercular undulations; in the middle flattened, with a longitudinal band; base convex, umbilicated, margin largely crenulated.

A RICHLY ornamented shell: the prominent undulations being crossed by rounded furrows, have a knotted appearance: the diverging striæ are in many parts rather obscure; where they cross the band, they have a semicircular form. Diameter above twice the height. The umbilicus appears to be plaited sometimes.

The inferior Oolite of Dundry has supplied Mr. Braikenridge with the specimens figured. The shells seem to have been very thick: their place is occupied by white transparent calcareous spar.

TROCHUS bicarinatus.

TAB. CCXXI.---*Fig.* 2.

SPEC. CHAR. Depressed, conical, with diverging striæ; volutions obscurely bicarinated, deeply undulated above, concentrically striated beneath; base convex, umbilicated.

THE cast of this shews the carinæ and undulations very clearly, but is otherways smooth. The outer surface differs only in having numerous sharp fine decussating ridges upon it. The base is concentrically striated, and has a large umbilicus.

Preserved in marl mixed with green sand, found in Marcham Field, near Oxford.

AMMONITES annulatus.

TAB. CCXXII.

Spec. Char. Discoid, with numerous, close, very prominent radii, which are often divided as they pass over the rounded front; volutions from 5 to 7, exposed; aperture roundish.

The numerous radii at first sight distinguish this from A. communis, (tab. 107;) the volutions are also more numerous than in that species. In some specimens the sides of the whorles are slightly depressed; in others gibbose. The radii are, externally, very prominent round ridges placed so near together as to form a deep sulcus between each, some of them are divided in their passage round the front, so that they appear equally distant over all parts. When the outer surface of the shell, which adheres strongly to the stone, is broken off, the ridges are much diminished; and instead of convex surfaces, like wires wound about the shell, they are flat, as if they were formed of square wire. The cast, when all the shell is removed from it, is also marked by slightly elevated rounded radii.

This species of Ammonite occurs along with A. communis, at Whitby, in Yorkshire. It is also met with in the lower sandy beds of the inferior Oolite, which approach the Lias at Cropredy, near Banbury, in Oxfordshire. Near Ilminster it is found, but with hardly any of the shell remaining.

Fig. 1. represents a specimen lent me by the Rev. W. D. Conybeare: it is in a grey porous limestone: its

chambers are lined with Carbonate of Lime: it is from Cropredy. *Fig.* 2. is half a nodule of indurated Marle, containing a similar shell, from Whitby. *Figs.* 3 and 4. are two views of a small specimen given me by E. Strangeways, Esq. from the neighbourhood of Ilminster: the same Gentleman has likewise given me a specimen from Whitby. The large specimen, *fig.* 5. is remarkable for the gibbosity of its whorles; but in other respects it does not differ from the small one, *fig.* 4, in the centre of it. It is from the same place, by favour of my valued friend, the late —— Cunnington, Esq. It is in indurated Marle, with some few grains of Hydrate of Iron, indicating an approach to the inferior Oolite.

UNIO concinnus.

TAB. CCXXIII.---*Figs.* 1 *and* 2.

Spec. Char. Transversely oblong-ovate, depressed, nearly smooth, thick; posterior side very small; beaks prominent, recurved.

Almost three times as wide as long, regularly convex, with a gently curved back; the thickness of the shell is remarkable; the lines of growth are sharp; in other respects the surface is smooth. The front is slightly incurved near the anterior end.

This neat species was lent me by the Rev. W. D. Conybeare, who obtained it from the lower beds of the inferior Oolite, at Cropredy, near Banbury, in Oxfordshire: it exhibits the form of the hinge remarkably well.

MYA ? literata.

TAB. CCXXIV.---*Fig.* 1.

Parkinson, Vol. 3, p. 196, *t. XIII. f.* 16.
Descriptive Catal. of Minerals and Fossil Organic Remains of Scarborough, &c. p. 129, *t.* II, *f.* 1.

Spec. Char. Transversely oval; subequilateral, convex, smooth, thin, with obtuse angularly bent ridges upon the central part; angles of the ridges in a longitudinal direction.

The ridges constitute a peculiar feature of this and the two following shells; and at the same time that they distinguish the tribe from any other that we know, their variations serve as distinctions among themselves. In this species their angles are placed in a directly longitudinal series; they disappear at the sides, and are soonest lost upon the anterior: near the beaks the angles of several ridges are cut off by short straight lines. The shell is thin, and so much broken, that its general form is but imperfectly displayed.

The specimen here represented was sent me by some friend from Whitby; whether it was collected at Malton, or not, I do not know: in the Catalogue of Scarborough Fossils it is mentioned as being found at the latter place in grey Limestone, as this specimen is. It is not possible, from the firmness of the stone in which all the individuals of this tender family have been protected, to disclose the structure of the hinge, and consequently to determine with precision what genus to refer them to. Among recent shells we know of nothing analogous, except Mya (Unio) corrugata, which is a strong and differently formed shell, that will materially assist us; but as they somewhat resemble the thinner species of the genus Mya, they are placed under it, until chance may discover characters at present concealed.

MYA V. scripta.

TAB. CCXXIV.---*Figs.* 2, 3, 4, *and* 5.

Spec. Char. Transversely oval, subequilateral, convex, smooth, thin, with obtuse angularly bent ridges upon the central part; angles of the ridges acute, in an oblique direction.

(Var. β) with an oblique elevation bounding the anterior side.

Figs. 2 and 4.

This differs from the species last described only in the oblique direction in which the angles of the ridges succeed each other, and these angles being more acute, altogether giving a different contour to the surface. In var. β the elevation which distinguishes it may possibly be the effect of pressure.

I have this species from the Kelloways rock at Little Somerford, by favour of the Rev. H. Steinhaüer, whose specimen is shewn at fig. 3; and from Kelloways, through the kindness of Mrs. Wetherall, who resides near the spot. Fig. 5 is from Bedford Castle, picked up by Mr. Goodhall.

The variety, figs. 2 and 5, are from two individuals in the possession of the Rev. W. D. Conybeare, who got them at Claydon, in Oxfordshire, out of the Shucborough bed of Lyas: they are very far from perfect.

MYA angulifera.

TAB. CCXXIV.---*Figs.* 6 *and* 7.

Spec. Char. Transversely elliptical, elongated, gibbose, with obtuse angularly bent ridges upon the surface; anterior half widest, gaping; angles of the ridges acute, in an oblique direction.

The ridges extend beyond the central part of this shell, and consequently many of them reach the front without being bent. The width is almost three times the length; the posterior side is very small.

Found in Limestone, in what is called by Smith the Fullers' Earth bed, at Smallcomb and Beacon Hill, Bath, by the Rev. H. Steinhaüer.

LUTRARIA lirata.

TAB. CCXXV.

Spec. Char. Transversely elongated, recurved, gibbose, with numerous obliquely longitudinal ridges.

Very much elongated transversely, being nearly three times as wide as long; the anterior side is nearly smooth, and rather compressed; the rest of the surface is almost covered by sharp ridges that diverge from the beaks: the front and back are parallel, the back being recurved.

Found in Limestone at Norton-under-Edge, from whence T. Meade, Esq. has sent it me.

LUTRARIA ovalis.

TAB. CCXXVI.

Spec. Char. Transverse, elongated, elliptical, straight, convex, with about 9 diverging ridges.

A rather gibbose inequilateral shell, with the curvature of the front and back nearly equal; the sides rounded, and very little open; the posterior side is much the smallest, and has only one or two radii upon it; the anterior side is not curved as in the following analogous shells.

I have figured two casts apparently agreeing precisely in form. Fig. 1 is from Felmarsham, communicated by the Rev. T. O. Marsh. The other is from Portland; it has a partial coating of calcareous spar, indicating a thick shell.

LUTRARIA ambigua.

TAB. CCXXVII.

SPEC. CHAR. Transversely elongated, gibbose, slightly recurved, anteriorly gaping, with several oblique diverging ridges.

VERY variable in the width, and the elevation of the ridges: some specimens are nearly obovate, these have in general the strongest ribs, which are sometimes knotted; other individuals are oblong, with obscure costæ.

The longer varieties of this shell approach so nearly to the L. gibbosa, (tab. 42.) that the Rev. W. D. Conybeare brought me a series, from which I have selected those of an intermediate form for figuring, to prove their relationship; and the shortest seem so near to Cardita producta, (tab. 197.) that it is very doubtful whether they be distinct species. As to the genus we are totally in the dark with respect to all the shells of this radiated character, not having seen the hinge of one of them; and the strong resemblance of the longer formed ones to the Lutraria, makes that the preferable genus to place all of them in for the present.

FUSUS bifaciatus.

TAB. CCXXVIII.

Spec. Char. Elongated, rugosely reticulated; volutions keel-formed; base produced.

For a Fusus this is rather a short shell; the keel-like form of the whorles gives them two flat faces, from which the name is taken; the last whorle is slightly ventricose; the beak short, and rather broad at its commencement.

Of this rare shell I have only one mutilated individual, which is from Highgate; the lip is very imperfect, so that it is not to be positively determined whether it have a sinus towards its upper part, and so be a Pleurotoma of La Marck, or not. It somewhat resembles the figure in Brander of Strombus errans (fig. 42) of which I have not seen a specimen.

MUREX tuberosus.

TAB. CCXXIX.—*Fig.* 1.

Spec. Char. Ovate, pointed, transversely striated, with many blunt, short costæ upon each whorle; base convex.

The number and bluntness of the knobs upon this Murex are strongly characteristic; its surface is rendered rough by lines of growth crossing the transverse striæ, which are rather strong; from the small portion remaining upon the specimen it appears that the beak is curved.

A very imperfect specimen of this has been obtained, imbedded in a septarium, from Highgate hill; it is the one I possess, and the only one I know; the probability of never obtaining better renders it necessary to figure this, as well as several other imperfect remains, since it is desirable to complete the list of shells found at Highgate, in conformity with the first intention of this work.

MUREX minax.

TAB. CCXXIX.—*Fig.* 2.

Syn. Murex minax. *Brander*, *fig.* 62.

Spec. Char. Short, transversely striated, spire tuberculated, acute; last whorle ventricose, with two rows of tubercles; the upper ones spiniform, furrowed; base sulcated; beak curved.

This Murex is about half as long again as it is wide; the last turn with the beak occupying the greater portion of its length. The plaited remains of lips of various ages are few, irregular, and but little prominent.

A rare species from Highgate: I have the same from Grignon; but I do not know that it is described by French authors.

MUREX cristatus.

TAB. CCXXX.—*Figs.* 1 & 2.

SPEC. CHAR. Ovate, transversely striated; longitudinal, costæ prominent, sharp, with three large plaits in each; the upper plait subspiniform, beak curved.

THE expanded lip that completes each successive period of the growth of this shell is very prominent, and forms a series of canaliculated spines upon the spire, in the proportion of six to each whorle; the spire extends to about one-third the whole length of the shell, and is sharp; the aperture is oval.

This species, as far as I have yet been able to learn, is peculiar to Highgate, from whence I have received good specimens, through the kindness of my esteemed friend, G. B. Snow, Esq. whose name I have had repeated occasions to mention.

MUREX coronatus.

TAB. CCXXX.—*Fig* 3.

SPEC. CHAR. Oblong, transversely furrowed; costæ numerous, sharp; upper part of the volutions concave, bounded by a sharp ridge, and a strong spine upon each of the costæ.

TEN sharp ribs give a polygonal aspect to the spire, at the same time the spines upon them standing up around the concave space at the top of each whorle, form a kind of crown to it. The beak is slightly curved, and the outer lip crenulated.

From Highgate hill, where it is not very rare.

PECTEN barbatus.

TAB. CCXXXI.

Spec. Char. Orbicular, depressed, transversely striated; rays 14, those upon one valve spinose; spines long, acute, depressed; ears nearly equal.

The spinose valve is the flattest; the striæ upon it are sharp, and much elevated upon the sides of the rays, from whence they curve into the bases of the spines, of which there are about five to each ray. The rays upon the other valve are convex, equal in width to the space between them, and crossed by less elevated striæ than those upon the spinose valve. The sides of both valves, near the ears, are perpendicular and neatly pectinated.

This remarkable Scallop is from the collection of Mr. Miller, who obtained it from the inferior Oolite of Dundry.

CARDITA lunulata.

TAB. CCXXXII.—*Figs.* 1 & 2.

Spec. Char. Rhomboidal, pointed, gibbose, transversely costated; anterior part separated by a projecting serrated keel; lunette deeply excavated; beaks involute.

Anteriorly this shell is pointed, and the beaks also project considerably, so that the general outline is an acute rhomb; the posterior side is rounded, and has an incurved edge about the confines of the lunette, which is very deeply impressed beneath the involute beaks; the anterior side is divided into several portions by slight elevations, or steps, the first of which is rather concave, forming a kind of truncation at the margin. There appear to be two teeth in the right valve, and one that locks between them in the left, immediately within the beaks: but distant teeth, if such ever did exist, are obliterated in the individual before us; the edge is toothed within.

A very extraordinary species named by Mr. Miller, in whose cabinet the specimens described are preserved; they were found at Dundry. There is a strong resemblance between it and Cardium retusum of Linneus, observed by Mr. Miller, but the resemblance is only general. I have seen the same species found in the inferior Oolite at Bayeux, in Normandy, by my highly valued friend Mr. De Gerville. Figs. 2, 2, give two views of the left valve.

CARDITA similis.

TAB. CCXXXII.—*Fig.* 3.

Spec. Char. Rhomboidal, gibbose, transversely costated; anterior part separated by a projecting serrated keel; lunette heart-shaped, nearly flat; beaks involute.

So exactly does this shell resemble the last that it is difficult to point out any other difference than the form of the lunette; however the costæ are less prominent over the sides, and the front is less pointed.

I have not seen the interior of this shell, but from its close resemblance to the last it must belong to the same genus: it is also from Dundry, and in Mr. Miller's collection. Both species have somewhat the contour of several Trigoniæ; hence the name similis is doubly applicable to the present.

ASTARTE excavata.

TAB. CCXXXIII.

Spec. Char. Obovate, convex, concentrically costated; anterior side truncated; lunette hemispherical, excavated; cartilage enclosed in a sulcus; margin toothed.

Nearly one-third wider than long, with the back arched; the beaks obscure, much inclined towards the posterior side, which is small. The lunette varies much in form, being narrow in young and broad in old shells, it is so deep that the cast of it resembles a globose bivalve. The furrow on the back for the reception of the cartilage is also deep, but it is very narrow and bounded by sharp edges that nearly approach each other. The costæ are not very much risen in any part, and near the front of large shells degenerate into irregular undulations. There are striæ upon the hinge teeth that might lead a casual observer to take it for a Trigonia.

Mr. Miller's collection contains the only exposed hinge I have seen, and the most perfect specimen for explaining the excavated lunette; it is from Dundry. I have specimens also from G. W. Braikenridge, Esq. from the same place.

HAMITES plicatilis.

TAB CCXXXIV.—*Fig.* 1.

Spec. Char. Slightly depressed, with numerous annular ridges; two rows of large, equal, flat, tubercles upon each side; curvature gradual.

The tubercles are possibly the rudiments of spines like those upon Hamites armatus; each one is so large as to extend over three of the annular ridges and flat; the ridges continue all round without dividing, and are very regular; the space between each tubercle is occupied by two of them.

I have figured this from the extensive collection Miss Benett has formed for scientific purposes; it was found in Chalk Marl, at Bishopstrow, near Warminster.

At fig. 2 is a representation of a fragment, which I conceive belongs to H. armatus (see tab. 168) it serves to shew the great size that species may attain to. My friend, G. B. Snow, Esq. picked it up on the Isle of Wight last year.

TRIGONIA gibbosa.

TABS. CCXXXV. & CCXXXVI.

Spec. Char. Transversely oblong, gibbose, slightly arched, concentrically undulated, or irregularly sulcated; anterior side separated by a broad longitudinal furrow or plane space.

Var. β with large, concentric, interrupted, or nodose ridges.

A peculiar character is given to this Trigonia by several deep furrows that mark sudden increases of size; the first is placed about three-quarters of an inch from the beak; the next as much further; then several more approaching nearer each other as they come to the front. The breadth is somewhat greater than the length; the posterior side arched; the beaks rather prominent, incurved; the anterior side is nearly plain, divided into three parts by obtuse bends, the central one forming a straight edge; the back is concave. It seems to have been a strong heavy shell, as the cast is very thick.

In var. β, the undulations which in var. α are only conspicuous near the beaks are large all the way to the front, and much interrupted in parts, so as to form irregular blunt knobs: in other respects there does not appear to be the slightest difference.

The casts represented on plate 235, and upper figure of plate 236, are silicious: they are from the Limestone of Tisbury, in Wiltshire; it is remarkable that the external cartilage has been cast in Silex, as well as the less perishable shell, and is thus well preserved. The

lower figure of plate 236, is from the cast of the surface of var. β, in a sandy Limestone; it is much flattened: also from Tisbury. Miss Benett who collected these specimens we hope will, ere long, favour the world with a full account of the local circumstances and situations they are found in.

TRIGONIA striata.

TAB. CCXXXVII.—*Figs.* 1, 2, and 3.

Syn. Trigonia striata. *Miller's MSS.*

Spec. Char. Obtusely triangular, convex, with arched, oblique, crenulated costæ upon the middle and posterior side; anterior side nearly covered by numerous elevated sharp ridges.

Length and breadth nearly equal; the anterior side is divided into a smooth and a striated part; the smooth part is small, and forms a kind of lanceolate lunette near the hinge; the striated part is nearly flat: in some specimens it is again divided by an intersection of the ridges.

Found in the inferior Oolite at Dundry, by Mr. J. S. Miller, in whose collection the specimens are deposited, with the name above quoted. Figs. 1 and 2 are different views of the same specimen.

TRIGONIA duplicata.

TAB. CCXXXVII.—*Figs.* 4 and 5.

Spec. Char. Transversely oblong; anterior side marked with small undulating ridges, and bounded by a strong tuberculated ridge; over the middle are longitudinal crenulated costæ, suddenly reflected over the posterior side; on the front are short intermediate ridges.

A slightly depressed shell; it is wider than long; the posterior side is small; the principal costæ are nearly straight, and sometimes branched towards the front; but generally they are only thinner, and alternate with other

short ones; those costæ which are near the posterior side are suddenly bent before they pass over it; over the anterior side are scattered some small irregular thread-like lines, and near the edge a few obscure tubercles. The beaks are rather prominent.

This was sent me several years ago by the Rev. H. Steinhauer, from the inferior Oolite of Little Sodbury. None of my specimens have the anterior side complete: the dotted outline is from a specimen which belonged to the Rev. Mr. Townsend, in recollection of whose merits I take a pleasure in mentioning his name. It is from the double series of costæ near the front that the shell is named.

TRIGONIA pennata.

TAB. CCXXXVII.—*Fig.* 6.

Spec. Char. Oblong, transverse, with concentric costæ; along the middle of the anterior side is a ridge from which many tuberculated ridges diverge each way.

The concentric costæ are striated upon their fronts; at one end they join the ridges upon the anterior side which diverge from a central line like a feather.

I have only seen one, and that a very imperfect cast of this shell, but as there are characters enough to distinguish it by, I thought it might be a useful addition to this plate. It occurs with casts of other Trigoniæ and Oyster shells, in a mass of coarse Quartzose sand, mixed with green sand, cemented by Carbonate of Lime, which was sent me from Teignmouth, by Thomas Hare, Esq.

OSTREA expansa.

TAB. CCXXXVIII.—*Fig.* 1.

Spec. Char. Broad, deltoid, angles obtuse, hinge pit wide, flat, slightly elevated, and nearly straight; cicatrix broad, with a sinus at the back.

Length and breadth nearly equal; the margin is largely waved: I am not acquainted with the outside of the shell.

There is a remarkable circumstance connected with this and the following Oyster; but most strikingly in this; it is, that the softer part of the shell under the ligament, has resisted the action of the solvent, that introduced Silex in place of the chalky substance between the laminæ in the other parts of the shell, but has subsequently decayed away, leaving an inclined hollow space reaching nearly to the beak.

These remains are found in the Tisbury Limestone, accompanied by empty casts of Trigoniæ, &c.

OSTREA undulata.

TAB. CCXXXVIII.—*Fig.* 2.

Spec. Char. Recurved, subtriangular, deep, posteriorly rounded; surface radiated; laminæ imbricated, undulated; cicatrix elongated, ovate, oblique: hinge pit slightly elevated.

A more regularly formed shell than what usually belongs to an Oyster; it is thick, and at the beak retains marks of attachment to some uneven surface; its laminæ are very regularly waved over the projecting radii. I have only seen the hollow valve.

This was brought to me by Miss Benett, along with the last, for the purpose of being figured, that a reference may be had to some at least of so numerous and obscure a tribe of shells. It is from Farley, near Salisbury. The cicatrix is excavated a little like the last, but there does not seem to be a silicious deposit between the laminæ. The excavation in the cicatrix has been thought to characterize the last species; but it is a circumstance that may be observed, not only in other Oysters, but in other genera, both foreign and British: thus the flat valve or support of Hipponix* cornucopia of De France has often a deep hollow in place of the arched cicatrix, in consequence of the shell being more liable to decay in that part.

Oysters and some other common shells are the most puzzling, because they admit of such extensive variation that, although there are certainly many species among them, the greatest discernment meets continually with stumbling blocks, while attempting to distinguish them from one another, or the recent from those of ancient times. The proportions of Oysters differ in every individual, more or less; the shape, placing, and even colour of the cicatrix also vary; and similar variations are to be found in both fossil and recent shells thus I have the placing and purplish colouring exemplified in fossil Oysters from Normandy, and in recent ones from America; the thickness of the shell and length of the hinge pit are sometimes characteristic, but vary much with age. The fibrous shell of the inferior Oolite is proved by specimens I have from Normandy to be an Ostrea, and is often above two inches thick; and I have a fossil hinge from the Tagus above four inches long; but other specimens of the same species are much shorter. Varieties of the common recent Oyster, which are distinguished by their localities, as Milton, Colchester, &c. although they are pretty well known by a general observer, yet, when compared individually, do not appear to possess any decided character; but after all, figures and a reference to a few characters must tend to assist us in understanding what shells are alluded to by Conchologists, and therefore I presume the present plate will be useful.

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* A new genus established by De France, containing several shells that were classed with Patella, but which are found to be attached bivalves.

PECTEN lamellosus.

TAB. CCXXXIX.

Spec. Char. Orbicular, convex; with concentric erect lamellæ upon the surface, and diverging striæ near the beaks; ears large, distinct.

Both valves are convex, but the lower one is most so; the front is semicircular placed a little obliquely; the straight sides, to which the ears are attached, connive to form a right angled beak; when the erect edges of the lamellæ are broken off, which is commonly the case, the shell appears to be constructed of large imbricated plaits like an Oyster; small, irregular, impressed striæ, which are interrupted and gradually lost towards the front, diverge from the beaks.

I am indebted to Miss Benett for this Pecten; it occurs in the fifth bed of the Limestone of Chicksgrove quarry, described in Vol. II. p. 58; it is also found at Thame, in Oxfordshire, among Sand, of which a very large portion is dark green Talc, or Chlorite: this Sand belongs to the same stratum as the Limestone of Chicksgrove.

TURBO ornatus.

TAB. CCXL.—*Figs.* 1 *and* 2.

Syn. Turbo ornatus. *Miller's MSS.*

Spec. Char. Conical, longitudinally striated; three or four acutely tuberculated ridges run along each whorle; the middle one largest.

An acute shell, rather longer than wide; the tubercles are slightly flattened, and connected in transverse ridges by narrow keels; upon the base are three or four smaller ridges with blunt tubercles: the aperture is entire.

Fig. 1 gives three views of a worn variety, in which the tubercles are nearly lost.

Fig. 2 shows more perfect specimens.

In Mr. Miller's cabinet; found at Dundry. I have a Turbo from Normandy resembling this, but it wants the striæ; it is in the same kind of rock.

TURBO carinatus.

TAB. CCXL.—*Fig.* 3.

Spec. Char. Conical, with many transverse crenulated ridges; whorles carinated.

Pointed, longer than wide; there are five or six ridges upon the exposed part of each turn, nearly close together, and deeply crenulated; the central ridge is so prominent as to form a carina.

Found in the Green Sand; but I do not know at what place.

TURBO muricatus.

TAB. CCXL.—*Fig.* 4.

Syn. Turbo. *Smith's Strat. Syst. p.* 49. *Strata Identified, p.* 20. *Coral Rag. Plate f.* 1.

Spec. Char. Short, conical, with many muricated ridges; lip plaited; columella indented at the base.

Pointed, nearly as wide as long; the ridges are equal to the concave spaces between them, they are covered with short semicylindrical hollow spines, the formation of which around the edge forms the plaited lip: this and the indentation of the columella are two very essential characters.

Common in the Coral Rag at Steeple Ashton and some other places; another shorter, but somewhat similar species, is found in Long Leat Park, and a third in the Pisolite: the three have been confounded together, but I hope hereafter to shew that they are quite distinct.

MELANEA fasciata.

TAB. CCXLI.—*Fig.* 1.

SPEC. CHAR. Turreted, short, transversely striated; whorles about six, marked with three coloured bands, coronated; aperture ovate.

BETWEEN two and three times as long as wide; the upper edge of each turn is crowned with rather distant obtuse knobs; the bands are preserved of a light brown colour, while the rest of the shell is nearly white.

I am indebted to Dr. Dansey* for this interesting little shell; it was found in the fresh water formation on the Isle of Wight, but seems to belong to a genus often found among marine fossil shells; it is further remarkable for the preservation of its colours.

The central figure is of the natural size; the others are magnified.

MELANEA costata.

TAB. CCXLI.—*Fig.* 2.

SPEC. CHAR. Turreted, transversely striated, longitudinally ribbed; mouth obovate.

VOLUTIONS about eight; length above three times the width; the costæ are numerous, but not much elevated. The spire tapers very gradually, the sides being almost straight.

Hordwell Cliff.

The lateral figures are magnified.

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* This gentleman has also favoured me with some new localities of shells formerly published, which I shall add after the Index to the third volume.

MELANEA minima.

TAB. CCXLI.—*Fig.* 3.

SPEC. CHAR. Turreted, smooth; sides straight; mouth ovate, pointed above; base slightly produced.

A VERY plain shell, composed of about eight whorles, which are flatish on the sides; nearly four times as long as wide.

From Brakenhurst, New Forest, Hants, by favour of the Rev. Mr. Iremonger.

MELANEA truncata.

TAB. CCXLI.—*Fig.* 4.

SPEC. CHAR. Conical, elongated, smooth; whorles angular below; mouth ovate, acute above, truncated below.

A SHARP polished spire and angular whorles distinguish this Melanea; the outer lip is a little thickened: the truncation of the edge of the lip, close to the columella, make it approach in appearance to a Cerithium.

From Brakenhurst with the last.

AMMONITES Lamberti.

TAB. CCXLII.—*Fig.* 1, 2, *and* 3.

Spec. Char. Discoid, depressed, radiated; inner whorles partly concealed; radii numerous, bent forward over the front, alternately long and short, rarely furcated; front sharp, crenated; mouth lanceolate, short.

The longer radii are strong obtuse ridges that proceed from the inner margin of each whorle and a little way beyond the middle are curved forward, sometimes they branch at this part, but generally the shorter ridges commence here and accompany them over the edge, where they produce an imperfect crenulated keel; in some specimens there are two or even three short radii between each long one, and in some the radii are much more elevated than in others, particularly in the last turn of large ones, where they are also proportionally less numerous. The diameter is nearly four times the thickness.

From Portland and Weymouth. Named after Aylmer Bourke Lambert, Esq. V.P.L.S. &c.

AMMONITES Leachi.

TAB. CCXLII.—*Fig.* 4.

Spec. Char. Depressed, radiated; inner whorles half concealed; radii undulated and curved forward over the front, often furcated; front sharp, crenated; mouth ovate.

This differs from the last only in being more gibbose, and having fewer and more prominent radii; it is possibly only a variety.

From Weymouth. I have joined Dr. W. E. Leach's name to this Ammonite, as a further mark of that respect already paid so often to his abilities.

AMMONITES omphaloides.

TAB. CCXLII.—*Fig.* 5.

Spec. Char. Gibbose, radiated: inner whorles half concealed; radii prominent, waved, bent forward in the middle of the front, generally furcated; front broad, rounded; mouth transversely oblong.

The whorles of this shell increase so rapidly as to form a large umbilicus; in this respect and their gibbosity it differs from the preceding species; but the form of the radii is very analagous: the short radii are not always joined to the longer ones, but when they are they frequently unite to two alternate ones on the opposite sides of the whorles, forming a zigzag line upon the front, as is shewn in the outline.

The shells figured upon this plate are all from the clay which occurs in Portland Island and near Weymouth: the first species is very abundant; the two others are less frequent: they are all cast in Iron Pyrites, and were probably pearly shells, although now the shelly matter is nearly all lost. Such specimens as have been long exposed to the weather have lost their sulphur, but still retain their form. The first I have received from Dr. Leach and A. B. Lambert, Esq. The two latter along with a series of the first were transmitted to me by Prof. Buckland, for the purpose of being figured.

AVICULA echinata.

TAB. CCXLIII.

Syn. A. echinata. *Smith's Strat. Syst. p.* 67. *Strata Ident. p.* 26, *Cornbrash plate, f.* 8.

Spec. Char. Obovate, gibbose; many muricated radii upon the deepest valve; flatter valve smooth, with the anterior ear pointed.

The deeper valve is a trifle longer than wide, with unequal ears, the anterior of which is nearly right angled. The other valve is often wider than long, because the beak of it is not so prominent as in the convex valve: its anterior ear is elongated and pointed; it is convex: in general it is smooth and free from radii, but in the one figured, which exceeds the usual size, it is radiated towards the margin.

An abundant species in the Cornbrash Limestone, where it occurs in thin beds that contain great numbers closely pressed together, as is shewn in a mass I have from Chippenham, Wilts. Loose shells are found at Langton Herrn, near Weymouth, as I learn from Prof. Buckland's specimens.

The shells figured at No. 1 are from Pavingham, presented to me by T. O. Marsh, Esq.

Figures 2, 2 are from casts in a compact Limestone like the Lyas, but I do not know the locality.

ORTHOCERA gygantea.

TAB. CCXLVI.

SPEC. CHAR. Shell gradually tapering, smooth, or striated; aperture oval, with the two diameters in the proportion of 7 to 8, siphuncle at a small distance from the centre, septa direct, numerous, deep.

THE aperture is eight or more inches in diameter, and as the shell diminishes at the rate of about one inch in a foot, its length may often exceed eight feet. The broader extremity is slightly expanded, and probably the other does not taper so rapidly as the middle, hence the above length may be under-rated. The thickness of the shell is about one fourth of an inch. On one small specimen the surface is finely striated longitudinally in the same way as O. striata (tab. 58) from which however it differs in not being compressed, and the siphuncle not being in the centre. The shell is so incorporated with the stone that it is difficult to discover the outer surface and consequently whether it be striated all over or only towards the smaller end.

This species of Orthocera does not agree with any of those described by Dr. Fleming*, or any other writer I have met with, but in general the descriptions are not particular enough for the discrimination of species, when more than one such are nearly allied. Had not the "Orthoceratites superficie lævi" of the Rev. Mr. Ure† been referred to by Dr. Fleming, under his O. lævis, which differs from O. gigantea, in the position of the

* See "Annals of Phil." V. 199.

† "History of Rutherglen and East Kilbride," p. 306, t. XVI. f. 3.

siphuncle and form of the septa: I should have referred it to this latter species, although it be of inferior size. I have been induced by the magnificence of their appearance to give full sized figures of a series of specimens, from the largest I possess to the smallest: I lately received them from that very liberal promoter of science and the useful arts, Charles Stewart Menteith, Esq. from his Lime-works at Closeburn, in Dumfrieshire. Mr. Farey (the gentleman to whom I have been indebted for the Stratigraphical Indexes) having been consulted by Mr. Menteith in 1815, respecting the probability of discovering coal on his estate, has furnished me with the following particulars:

"The Closeburn Lime Quarry is situated about seven-eighths of a mile S.S.E. of the Church, and about half a mile E.N.E. from the well-known inn on the Toll Road to Sanguhar, called Brown Hill, in rather low ground, about one eighth of a mile distant to the S.W. from the commencement of a considerable Basaltic Hill, called Barn Muir. The sinking of the quarry and a boring near it, were stated to me by Mr. John Waugh, the resident agent, as follows:

"1st. Sandy Gravel 21 feet.

"2nd. Clayey Gravel or Till, intercepting the land springs from No. 1. seven feet and a half.

"3rd. Slaty beds, or hard laminated Clay.

"4th. Clay; the lower part of which in drying separates into small pieces.

"5th. Doggers; a hard and bad Limestone, in three beds, two feet.

"6th. Upper rock of Limestone; of a dun-red colour, and somewhat granular, with dark red joints, separating the ports or blocks of stone.

"7th. Lower Doggers; a very bad Limestone, used for walling; it includes some clayey and shattery way-boards, nine feet.

"8th. Clay, used for brick, two feet and a half.

"9th. Flagstone, six inches.

"10th. Hard Clay, used for furnace or fire bricks, three feet.

"11th. Nodulings or pinney Beds, composed of lumps of good Limestone, set fast in earthy matter.

"12th. Lower Lime-roof beds, four feet and a half.

"13th. A hard, compact, good Limestone, from which, the principal supply of stone is now obtained, by mining underneath, and leaving pillars to support the roof; herein the Orthoceræ are found, accompanied by Nautili, and some other spiral shells, Producti, Trilobites and Corals, thirteen feet.

"14th. Clay, six inches.

"15th. Lowest Doggers, fourteen inches.

"Below these, Sandstone and Limestone are said to alternate, for about 50 feet; and then a very hard rock commences, perhaps Basalt? The dip is N.E. 1 in 8.

"In the Bajarg Lime quarries, situated about two miles W. S.W. from those of Closeburn, Orthocera 20 feet long have been found, in the Limestone rock (perhaps the same bed as No. 13 at Closeburn) as I was informed by Mr. John Milligan, the agent resident there."

Mr. Farey also observes, "It seems to me remarkable that Professor Jameson, in p. 91 of his 'Mineralogy of Dumfrieshire,' when speaking of the Closeburn and Bajarg quarries, omits all mention of these remarkable Orthoceræ, but speaks of 'large Ammonites,' as I believe by mistake."

In pages 91, 97, and 99, Mr. Jameson says, "that the petrifactions of Closeburn and Bajarg, correspond with those of other quarries in a more southern part of the county at Brown-muir, Blacket-rig, and Chaldron-linns, where Corallites, Chamites, and Mytillites are mentioned."

The Limestone rock of all which places Mr. Farey considers as undoubtedly belonging to the Under-coal or Mountain Limestone, and the same perhaps as that of Ashford, Bakewell, &c. in Derbyshire High-peak Hundred, wherein large Orthoceræ of several species are found, see W. Martin's "Petrificata Derbiensia," tab. 38 & 39.

Orthoceratites have been considered as characteristic of Werner's Transition Limestone, but in England at least they are to be found more frequently in the mountain Limestone, and those Limestones or Shales which accompany the lowest seams of Coal. In the oldest Transition Rocks of Great Britain it does not appear that they have ever been found.

Very large Orthoceræ are said by some authors to have been met with, but those who have taken the pains to give the measures of what they found, have not described any above a quarter of the size of our O. gigantea; hence I conceive it must be new.

The stone this is found in differs from the metalliferous or mountain Limestone of England in color, being of a deep red, and in having a micacious shale dispersed through it. It contains many of the same shells and corals; but this and the following species of Orthoceræ seem peculiar to it.

ORTHOCERA cordiformis.

TAB. CCXLVII.

Spec. Char. Obconical; base contracted; sides convex; aperture round.

In size and form this much resembles a bullock's heart; its septa are numerous, and placed directly across; the surface appears to be smooth and plane; the siphuncle is not quite in the centre; the tube of which it is composed is inflated into a globular form between each septum (see figs. 2 and 3); the last chamber is narrower at its opening than at its base.

If the Belemnites be really distinct from Orthoceræ, the shortness of their alveoli will no longer be sufficient to distinguish them from Orthoceræ, since the one before us is shorter than most of the genuine alveoli, and must still be considered as a true Orthocera, for it is not likely that a Belemnite, of a size proportioned to it, could have passed unnoticed, had it existed in the same quarry; and it is still less likely that it should have been destroyed, while its more tender chambered part remained so preserved as to resist the shock of worlds. I have been favoured with several specimens of this species by the same gentleman, and from the same place as the O. gigantea. One specimen is particularly interesting for shewing a section of the siphunculus, composed of a series of hollow globes: it is very much fractured, but there is enough of the outer part to prove that it belongs to this species, and not to the gigantea. A similar siphunculus is described and figured by the Rev. Mr. Ure ("History of Ruthergleu and Kilbride," p. 306.

tab. XVI. f. 1.) from a more perfect specimen, as far as regards that part; but there seems to be less of the shell attached to it. Is it possible that it belongs to the present species, and not to the one he refers it to? especially as it appears, that only some specimens were thus inflated. We are not acquainted with the tube of O. gigantea.

MODIOLA cuneata.

TAB. CCXLVIII.—*Fig.* 2.

Spec. Char. Transversely elongated, slightly compressed, nearly smooth; posterior side small, undefined; anterior side slightly curved and produced.

An intermediate shell, between Modiola and Mytillus, but decidedly a Modiola, although the posterior side does not form a distinct lobe; it is four times as long as wide; the surface is irregularly striated by lines of growth; but otherwise smooth; the shell is moderately thick.

This was sent me as found in the upper beds of the Lyas Clay at Bourton, near Cropredy and Banbury, in Oxfordshire, by the Rev. W. D. Conybeare: it is also found near Bath.

MODIOLA plicata.

TAB. CCXLVIII.—*Fig.* 1.

Spec. Char. Transversely elongated, slightly curved; back nearly straight, plaited obliquely.

The anterior side is separated by a ridge, above which it is striated, and towards the back the striæ disappear gradually, and strong undulations commence, which, along the back, become sharpish plaits that diverge from the beaks; the rest of the shell is smooth, excepting that it is marked by blunt irregular lines of growth. The ante-

rior end is slightly truncated; the other obtuse; they are nearly equal in width, that is about one-sixth of the length.

I have seen this species from Felmarsham, in Bedfordshire, where it was collected by the Rev. T. O. Marsh,* and also from other parts of the Cornbrash Limestone stratum.

* This gentleman's name has been erroneously given at p. 75, for which I have to beg his pardon.

NAUTILUS pentagonus.

TAB. CCXLIX.---*Fig.* 1.

SPEC. CHAR. Discoid, subcarinated; inner turns partly concealed; aperture orbicular, obscurely 5-angled, and impressed by the preceding whorle, nearly half the diameter of the shell long.

BESIDES the carinated form of the front of the whorle it is flattened a little upon each side, which gives five inconspicuous angles to the aperture. The turns are few, and increase rather rapidly in size, the inner ones being about one-third covered by the outer. The septa are not very concave, rather numerous, with a central siphuncle. The surface is apparently smooth. The young shells seem to be less angular than the older ones.

The first specimen I received of this Nautilus was found in black Limestone, at Bathgate, Scotland, and given to me by my friend Dawson Turner, Esq. I lately received several specimens in red Limestone, from the same quarries at Closeburn which produced the gigantic Orthocera, tab. 246. through the liberality of C. S. Menteith, Esq. They are probably what Jameson has spoken of as large Ammonites. I do not know they are found much larger than the figure.

NAUTILUS bilobatus.

TAB. CCXLIX.---*Figs.* 2 *and* 3.

SPEC. CHAR. Subglobose, umbilicated; septa two-lobed; aperture 3 or 4 times as wide as long.

A NEARLY globose shell, with the front a little flattened, the umbilicus is small and nearly cylindrical; the si-

phunculus is central, on each side of it the septa are remarkably concave, so as to form two elliptical lobes. It is nearly as thick as wide.

From Closeburn, with the last. Fig. 3 is from an impression taken in pipe-clay from the specimen represented at fig. 2.

NAUTILUS tuberculatus.

TAB. CCXLIX.---*Fig.* 4.

SPEC. CHAR. Discoid, thick, largely umbilicate; one row of large tubercles on each side; front rounded; aperture transversely elongated, two-angled.

THE width of the aperture is twice its length; the inner turns are almost wholly exposed by a large conical umbilicus. The septa are not very concave, but their edges are slightly waved.

This Nautilus bears some resemblance to Ammonites Banksii in general form, but perhaps is not so thick. It is from Closeburn, by favour of C. S. Menteith, Esq.

Fig. 5 represents the cast of some involute shell, the genus even of which I have not been able to discover. Should any observer be so fortunate as to meet with illustrating specimens, I should be happy to make them useful. I conceived all these specimens would be thought interesting as they are all from the same stratum, and there may never be better.

HIPPOPODIUM.

GEN. CHAR. An equalvalved obliquely transverse bivalve; valves inflated, subbilobed; one rugged tooth at the hinge; cartilage external.

THE beaks of the Hippopodium are much incurved, and behind them there is a deep heart-shaped cavity; the anterior slope is deeply sunk between the anterior lobes of the two valves. The cartilage of the hinge is external and elongated. In the left valve there is one thick rugged tooth beneath the beak, and only a small indication of a remote one beneath the cartilage.

The Rev. W. D. Conybeare first distinguished this genus, and named it in his M. S. catalogues. At present only one species is known, and of that the specimens hitherto found are not enough freed from the stone to shew the situation or number of the muscular impressions, or the tooth of the right valve, if it have one.

HIPPOPODIUM ponderosum.

TAB. CCL.

SPEC. CHAR. .....

SYN. A bivalve fossil from Colebrook Dale.
Rashley's specimens of Minerals, tab. xx.

A VERY gibbose, rugged, and heavy shell: the lines of growth are strongly marked by irregular obtuse ridges. The anterior lobe is somewhat angular, and a little pointed; the posterior lobe much smaller, rounded, and as it curves with the beak it forms the boundary of the heart-shaped pit beneath it: this pit is deep, and

apparently continues to the very tooth of the hinge, upon which the lines of growth are strongly marked, continuing from the edge of the valve. The depth of one valve is equal to its smallest diameter, and this is about half the measure from the point of the anterior lobe to the beak : the cordiform pit is wider than long. When placed upon the prominent parts of the anterior lobe, the front is so obtuse, that it resembles in its general form a horse's hoof; whence the name of the genus.

Found at Toddenham, near Shipston-on-Stour, in Gloucestershire, by the Rev. W. D. Conybeare. (See the upper figure.) It is also found at Fenny Compton tunnel, on the Oxford canal, whence the lower figure ; and at Cheltenham ; in all these places in the upper beds of the Lyas, as I am informed by Mr. Conybeare.

MODIOLA ? alæformis.

TAB. CCLI.

Spec. Char. Triangular, inflated ; back straight; posterior lobe very small; anterior lobe flattish; central part convex, elongated, with projecting beaks.

Length nearly twice the breadth ; the projecting part of the anterior side, which gives it a wing-like form, makes this shell approach to Avicula. The posterior lobe is somewhat acuminated : between it and the principal lobe is a concave space. The depth of the two valves united is equal to the width. The surface is rather rugged and imbricated.

This was sent me from Sandgate, on the Isle of Wight, by the Rev. W. D. Conybeare, who seemed to think it might possibly be a Hippopodium. It is however sufficiently distinct from the type of that new genus figured in tab. 250. It somewhat resembles Avicula and Modiola, but I am at a loss to determine to what genus it really belongs, and there is not much chance of discovering the parts about the hinge.

OSTREA Meadei.

TAB. CCLII.---*Figs.* 1 *and* 4.

SPEC. CHAR. Tongue-shaped, thick, elongated; attached valve very concave, longitudinally undulated; the other plain and flat.

A VERY rugged irregular shell, but generally much elongated; its substance is compact, in which it differs from somewhat similar recent ones, whose laminæ enclose large cysts. The flat valve in the specimen before us has the lateral crenulations near the hinge, common in this genus, very conspicuous.

I was favoured with this specimen some years ago by Thomas Meade, Esq. but do not know the locality; it is probably from Somersetshire. I have not been able to identify it with any species hitherto described.

OSTREA tener.

TAB. CCLII.---*Figs.* 2 *and* 3.

SPEC. CHAR. Depressed, elongated, thin, nearly plain; attached valve, nearly flat, with a canaliculated beak.

THIS slender, and consequently fragile Oyster, is generally much longer than wide; it is often much distorted, so, as it is never deep, the upper valve frequently becomes concave: both valves are free from radiating undulations, and possess an uncommon degree of smoothness, although they are composed of imbricated laminæ. The pointed beak of the upper valve included

in the canaliculated and often curved beak of the other, is a frequent character.

This shell is very abundant in one of the strata belonging to the plastic clay at Charlton in Kent: I suspect that it may also be found near Paris, but I have not seen specimens from that neighbourhood.

OSTREA flabellula.

TAB. CCLIII.

Spec. Char. Oblong, arched; larger valve deep, longitudinally plaited, with a toothed margin; the other flat and imbricated, with an entire margin.

Syn. Ostrea flabellula. *La Marck Hist. des Animaux s. vertèbres, vi.* 215.
Chama plicata. *Brander*, 84 and 85.

Very variable in form, like most Oysters, but constantly arched; the beaks are prominent, and especially of the hollow valve, much curved; the plaits are somewhat irregular, but commonly diverge from a curved line along the middle of the valve. Some specimens have a small wing in the hollow side. The lateral crenulations are very conspicuous on the sides and edges of the flat valve near the hinge.

This is certainly Brander's Chama plicata, and the same species as that found at Grignon: it is remarkable that De La Marck should hesitate to admit the plain valves as the same species, Brander's fig. 84 is so good: I have frequently met with the two valves attached.

Fig. 1 represents a specimen from Hordwell or Barton, from which places I have many of all sizes, from half an inch to near two inches long, by favour of Miss Salisbury, the Rev. Mr. Bingley, and other kind friends.

Figs. 2, 3, 4, 5, 6, 7, and 9, are from four specimens selected from a large number sent me by Charles Lyell Jun. Esq. who obtained them at a brick-kiln at Lyndhurst.

Fig. 8 is a variety, with an uncommonly large beak and hinge-pit, from Barton, by favour of Miss Salisbury. Larger individuals with stronger undulations are dredged up in Emsworth harbour, for specimens of which I am indebted to J. Holloway, Esq.

AMMONITES Strangewaysi.

TAB. CCLIV.---*Figs.* 1 *and* 3.

SPEC. CHAR. Discoid, radiated, radii twice curved; inner turns exposed; margin flattened, carinated, inner edges of the whorles obliquely flattened; sides nearly flat, with an obscure concentric furrow, aperture oblong.

FOUR or five turns are distinguishable in this Ammonite; its diameter rather exceeds three times the length of the mouth, which is twice as long as wide; the radii are largest and most distinct near the margin, on the other parts they are often obscure, they are very numerous, each forms two semicircles reversed to one another, the ends of which join in the obscure, or rather wide and shallow, furrow that runs round the sides. The oblique flattened surface that forms the inner edges of the whorles, slants from the centre, and becomes a strong character.

From Ilminster, by favour of E. Strangeways, Esq. a Gentleman well known as a practical Geologist.

AMMONITES falcifer.

TAB. CCLIV.---*Fig.* 2.

SPEC. CHAR. Discoid; radiated; radii curved and suddenly bent in the middle; inner volutions half exposed; margin convex, carinated; whorles convex on their sides; aperture elliptical.

THE diameter is little more than twice the length of the aperture. The radii are numerous and close together;

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as they diverge from the centre they turn a little forward, then bend suddenly back, and afterwards proceed in regular semicircles to the margin, somewhat resembling the curve of a reaping hook. The inner edge of the turns is elevated and obtuse.

This nearly resembles the last, but is not so flat, and wants the flat surface of the inner margin of the whorle. It is from the Inferior or Iron-shot Oolite of Ilminster.

AMMONITES Goodhalli.

TAB. CCLV.

Spec. Char. Discoid, carinated, radiated; inner turns two-thirds exposed; radii large, undulated, irregular, obscurely tuberculated at each end; keel very prominent, thin; aperture oblong.

Both edges of the whorles of this Ammonite are gradually rounded; the sides nearly flat. Between the principal radii are sometimes shorter ones, the first have an elevation at each end forming a kind of tubercle, the latter have tubercles at the outer ends only, none of the radii are very prominent, although they are broad. The length of the aperture equals about two-fifths of the diameter.

The specimen here exhibited is a calcedonic cast in micacious Sandstone, from Blackdown, Devonshire; it was given me by H. H. Goodhall, Esq. in commemoration of whose long continued researches we have named it.

VENUS turgida.

TAB. CCLVI.

Spec. Char. Orbicular, gibbose, with concentric ridges; valves thick, with tumid crenulated edges.

The ridges upon this shell are variable according to the age or state of preservation: in some specimens they are sharp and prominent, in others they are scarcely elevated. The tumid edge does not appear until the shell has attained its full growth, when it is sufficiently remarkable. The lunette is defined by a line; it is cordiform. The hinge possesses the small tooth that marks the genus Cytherea of La Marck.

I have this among the numerous contributions from the crag of Norfolk and Suffolk, lately made to me by the Rev. G. R. Leathes. The specimen of which two views are given at fig. 1. is in excellent preservation, and shews the prominent ridges, the other specimen appears to have been worn: the first is from Ramsholt, near Woodbridge, out of a newly discovered bed of clay; the latter from Woodbridge. I have also a younger white shell with a thin edge from Roydon.

ASTARTE planata.

TAB. CCLVII.

Spec. Char. Transversely obovate, gibbose, with small obtuse concentric ridges; edges crenulated; lunette concave; shell thick.

The ridges upon the surface are small, obtuse, close together, and lost near the margin; the edge is often very broad, flat, and crossed by sulci formed of extended crenulations, which are visible even when the valves are close. The anterior side is slightly truncated.

This is a plain looking shell, in consequence of the smallness of the ridges; it is nearly two inches wide, and above one inch and a half long when full grown: the whole of the broad crenulated margin being visible when the valves are close has a curious appearance.

Found in indurated Marl at Gunton, by the Rev. G. R. Leathes; and at Roydon by —— Smith, Esq.

VENERICARDIA. *La Marck.*

Gen. Char. An equalvalved, inequilateral bivalve; ribbed longitudinally, hinge furnished with two thick teeth directed obliquely to one side.

A genus of shells externally much resembling Cardium, but with a totally different hinge, which consists of two teeth in one valve fitting into hollows in the other, they both rise near the beaks, and are nearly parallel with each other and the hinge slope; one is generally shorter than the other, and takes a more longitudinal direction; the longer one is often comparatively thin, and sometimes it is lost in the callosity that supports the cartilage.

VENERICARDIA senilis.
TAB. CCLVIII.

Spec. Char. Obliquely cordate, thick, with large, convex, subimbricated, naked ribs; lunette obsolete.

Syn. Venericardia senilis. *De La Marck, Env. de Paris, 222. Parkinson, 3, 191, t. 13, figs.* 15 and 17.

By age this shell becomes transversely oblong, and when young it has somewhat of a square form produced by the elevation of the hinge slope; the ribs are about 17 in number; they are rather rugose in consequence of the edges of the imbrications being blunt and seldom reflected; the edge has a square tooth between each rib as is common in Cockles, Pectens, &c.

Fig. 1 represents a well grown individual of this species, and fig. 3 a younger one.

Fig. 2 is a thick variety, and seems to have been interrupted in its growth, having lived in a less congenial soil; it has been thought to be a distinct species, and the Rev. Mr. Leathes, to whom I am indebted for it, proposes to call it Venericardia antiquata.

They are all from the Suffolk Crag.

VENERICARDIA carinata.

TAB. CCLIX.---*Fig.* 2.

SPEC. CHAR. Transversely oblong, with 20 nearly smooth carinated ribs; lunette obsolete.

A GIBBOSE rather slender shell, but little indented below the beaks; the ribs are prominent, and rather square, with a sharp elevated smooth keel along each; the lunette is minute; the edges are toothed as usual. Width about one inch, and length 3-4ths of an inch.

This elegant species was procured by J. Holloway, Esq. at Stubbington.

VENERICARDIA deltoidea.

TAB. CCLIX.---*Fig.* 1.

SPEC. CHAR. Deltoid, with rounded angles; ribs 15, keel formed; hinge callous; beaks prominent; lunette small.

A RATHER strong shell, particularly heavy about the beaks; the ribs rise very gradually from the surface of the shell, and are sharp in the middle, they are smooth; the edge is toothed between the ribs.

A remarkable shell, found by C. Lyell, Jun. Esq. in clay, at Lyndhurst in Hampshire.

TAB. CCLIX.---*Fig.* 3.

Is the cast of a shell nearly allied to a Venericardia, but too imperfect to decide upon; it is of rare occurrence in the Marl of Ringmer, whence G. Mantell, Esq. sent it. I should be happy to meet with better.

CONULARIA, Miller.

Gen. Char. A conical, hollow, univalved shell, divided by imperforate septa, mouth half closed.

Only two species are known of this genus, therefore, but little can be said of its general form, that which is to be considered the type of the genus, is a straight four sided pyramid, ornamented upon the surface, and whose base is partly closed; the septa occupy perhaps half the length; they are convex towards the apex, and imperforate, unless there be a very minute siphuncle in one of the angles. It has hitherto been found only in a fossil state.

Mr. Miller, of Bristol, has very properly instituted this new Genus for the reception of a four sided fossil somewhat resembling an Orthocera, but furnished with imperforate septa and an inflexion of the lip, that nearly closes the mouth. It may perhaps belong to that family of Lamarck's order of shelly Animals Crassipedes, which inhabit tubes (Conchifères crassipèdes tubicolées) and contains Teredo and some other tubiform shells, whose tubes are sometimes jointed.

CONULARIA quadrisulcata.

TAB. CCLX, Figs. 3, 4, 5, and 6.

Syn. C. quadrisulcata, *Miller's M.S.* catalogue.
A curious fossil, *Ure, History of Rutherglen and Kilbride, p. 330, t. XX. f. 7.*

Sp. Char. Foursided, straight, transversely sulcated, and Longitudinally striated; the four angles sulcated.

In the centre of each side the sulci are bent, the spaces between them form very narrow ridges, and the longitudinal striæ are most conspicuous within the hollows; the furrows approach very close together near the base. Two of the angles opposite each other are longer

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than the others, they are all equally excavated; the lips of two sides are inflected over rather more than half the base and meet opposite to the shorter edge, they are sulcated in the same manner as the rest of the surface; the septa are slightly and irregularly striated across.

The above description is taken from a very perfect specimen (fig. 4) found by the Rev. R. B. Plumtree of Gloucester, in transition Limestone, who gave it to Mr. Miller; it is the only one in which I have seen either a septum or the inflected lips. Fig. 5, is from a specimen also belonging to Mr. Miller, it is from the lowest bed of the Bristol Limestone about the Hotwells.

Fig. 3, is out of a dark coloured Transition Limestone that contains Mica, and some kind of Coral from a part of Westmoreland near Keswick. Fig. 6, is taken from a Scottish specimen found at Tronlie Bank near Glasgow. The three last mentioned specimens have the sulci closer together than the first, but as they are in a much worse state of preservation, we cannot pronounce upon their being distinct species or even varieties.

The Rev. Mr. Ure's specimen was in Ironstone, and he observes that specimens are "sometimes found inclosed in Ironstone like a nucleus; at other times found among Till (Schale) along with marine shells, &c. Specimens are very rare."

CONULARIA teres.

TAB. CCLX, Figs. 1 and 2.

Sp. Char. Conical, round, slightly bent, transversely, striated, a smooth space near the apex.

The striæ are irregular, as well as the curvature, the general form approaches towards cylindrical, but the smooth part near the apex is more conical.

I have seen but one specimen of this; it was very imperfect, and I only place it here provisionally; it was found in Scotland, along with fig. 6, above described. It very probably belongs to a different genus.

NAUTILUS complanatus.

TAB. CCLXI.

Sp. Char. Discoid, compressed, smooth; sides flat; inner turns exposed; aperture lanceolate. A reversed sinus in the edge of each septum, near the inner angle.

The margin is rounded, but the sides very flat;* the inner volutions are completely exposed by a kind of truncation of the inner edges of the whorles, the surface left by this truncation is concave. The whorles are about four or five; half of the last is free from septa; the length of the mouth is 5 or 6 times its width.

This Nautilus appears to be entirely new; it was discovered in a slaty Limestone, at Scarlet, on the Isle of Man, by J. S. Henslow, Esq. This gentleman promises to give a more perfect geological account of the Isle of Man, than has hitherto appeared, and to correct many false ideas that have been circulated respecting it.

* I suppose this to be the original form, and not ascribable to the pressure of the Slaty Stone.

AMMONITES Henslowi.

TAB. CCLXII.

Sp. Char. Discoid; sides flat; front rounded; inner whorles exposed; septa, with three entire tongue-formed sinuses upon each side; aperture obovate.

About 12 septa, with margins that are remarkably entire for an Ammonite, occupy each whorle of this curious Shell; the three sinuses on each side the edges of the septa correspond in shape with the intermediate projections which have, in the cast, the form of a tongue, or the sole of a pointed shoe, being contracted towards their bases; on the front of the edge is an acute sinus, which contains the siphuncle; the whorles are about four; the length of the aperture is about two fifths the diameter of the shell and double the thickness.

This is one of many curious petrifactions found by J. S. Henslow, Esq. during a visit to the Isle of Man in 1819; it is in the compact dark grey Limestone which occurs at Scarlet in that Island. The want of the minutely sinuated edges of the septa, is a character that several other Ammonites possess. The Woodwardian Professor at Cambridge has selected two foreign specimens which have the septa lobed, but unless the surfaces of the casts have been deeply worn, the lobes have entire edges: such species are not however numerous, and specimens of them are rare; the foreign one I have made a 4to plate* of, for the sake of comparison and named it Ammonites Sedgwicki in honour of the Professor whose name I think it will be a pleasure to commemorate.

* I have also engraved several other foreign, unique, or remarkable Shells, which are sold separate.

AMMONITES Koenigi.

TAB. CCLXIII, Figs. 1, 2, and 3.

Sp. Char. Discoid, convex, with radiating undulations; inner whorles half exposed; marginal undulations numerous; central undulations few, very prominent; aperture cordate elongated.

The young state of this Ammonite is less depressed, so that the aperture is then nearly orbicular; when full grown the last whorle occupies two-fifths of the diameter; the margin is rounded; the undulations upon it extend also half way over the sides, and every third or fourth is met by a large undulation that rises almost into a low tubercle; the septa are few, their lobes are not deeply sinuated; whorles about six.

The young shells represented at figs. 1 and 2 are from Kelloways, which place also furnishes full sized specimens, with a dull sparry Carbonate of Lime in place of the shell. Fig. 3 is from Charmouth; it is in a nodule of indurated Marle; the shell is mostly reduced to a chalky texture, but is in some parts pearly. This was presented to me some years ago by Dr. W. E. Leach, of the British Museum. I name it Koenigi after his colleague, who is now so busily investigating fossil remains.

AMMONITES Browni.

TAB. CCLXIII, Figs. 4, and 5.

Sp. Char. Discoid, with radiating undulations; inner whorles half exposed, with large tubercles upon each side; marginal undulations many, central ones few, rising into tubercles; front rounded with a distinct keel; aperture cordate.

In general appearance very much like the last, but rather thicker and sufficiently distinguished by the keel and knobs upon the inner volutions.

From Dundry, by favour of my good friend G. W. Braikenridge, Esq. I wish by the name of this Ammonite to commemorate R. Brown, Esq.: a gentleman of general knowledge, and an excellent Botanist.

LIMA proboscidea.

TAB. CCLXIV.

Sp. Char, Broad, ovate, convex, with twelve ribs, each furnished with several large tubular processes; ears small.

The tubular processes are thicker than the ribs they arise from; they are an inch or more long, variously bent and pressed to the shell; their ends are often expanded, they are nearly alike on both valves; the ribs are large and smooth, except a few rudiments of processes here and there. The length is to the width as three to two nearly, the depth is not considerable.

Single valves of this shell, without the hinge, might be taken for Spondili, but the similarity of the two valves, and the opening between them on one side seem to confirm the idea of its belonging to the genus Lima; yet as we have not seen the inside of the hinge we may be deceived, and it may prove to be a new genus.

The larger figure is taken from a specimen lent me by the Rev. W. Buckland, it was found near Weymouth; the lesser one is from the same place.

SPIRIFER trigonalis.

TAB. CCLXV.

Syn. Anomites trigonalis, *Martin Petr. Derb. Tabl. 36, f. 1.*

Sp. Char. Gibbose, transversely striated; with 26 radiating sulci; hinge line as long as the shell is wide; front semicircular; the three central ridges elevated; beaks incurved approximated.

Although this is named trigonalis, the front is so round that it can hardly be called even obtusely angular; the spaces between the sulci are rounded; three of them occupy the elevated part of the lesser or upper valve, and these are again obscurely divided, the central one into three and the others into two; the flat back meets the sides at an acute angle, it is striated; the whole surface is regularly and finely striated transversely; the striæ are elevated and sharp, but often are worn down or adhere to the stone the shell is imbedded in.

The first specimen of this shell in which I discovered the internal spiral appendages was imbedded in a mass of Chert that was presented to me by the most eminent friend to science Sir J. Banks, upon whose estate at Overton near Ashover, Derbyshire, it was found in the Mountain Limestone; I have confounded it with Anomia striata of Martin in my paper in the Linnean Transactions, vol. XII, part 2, p. 516. The shell is lined, and the spiral contents coated with minute crystals of Quartz. Within the last two years many specimens of

this and some other speciesof Spirifer, with the internal structure manifested, have been found in the Cave near Castleton, Derbyshire, by Mr. Mawe, and these have enabled me to decide the species of the one I formerly had (fig. 1) and to compare Mr. Martin's own specimen of An. trigonalis with those I found perfect enough for figureing, see figs. 2 and 3.

Fig. 4 represents two views of the spiral appendages separated, they are generally coated by crystals of Carbonate of Lime; within they are composed of a somewhat fibrous shelly substance.

R. Brown, Esq. is probably the first person who observed the spiral cartilage in a Calcedonic cast of another species found by him in New Holland.

AMMONITES Heterophyllus.

TAB. CCLXVI.

Sp. Char. Lenticular, umbilicated, striated ; sinuosities of the septa of two kinds, small and acuteangular, or large and ovate.

This is one of those Ammonites with the inner whorles concealed, which have often been called Nautili, but which an attention to the edges of the septa will always distinguish. It has the front rounded, the sides convex marked by very numerous diverging, elevated, and slightly waved, striæ ; the umbilicus small and deep ; the apperture elliptical with a notch for the reception of the preceeding whorle, it is nearly two thirds the diameter of the shell in length. The edges of the septa are deeply sinuated and some of the sinuses are larger than others and much more obtuse so that the lines formed by them upon the surface of the cast, resemble two kinds of pinnated foliage, in one of which the terminal leaflets are oval and large, while in the other the divisions are all small and have acute points.

We have named this Ammonite after a configuration that in the specimen before us has been rendered remarkably distinct by the decay of the surface ; in whatever state it occurs, however, sufficient traces of the edges of the septa may generally be found to show the character, unless the surface be very deeply eroded, for the shell itself is thin and adheres but slightly to the septa. It is often necessary to take into consideration

the state of preservation, as it often disguises some characters while it discloses others useful to the Geologist.

The specimen figured is from Whitby, it was lent me by Colonel Birch, I possess a fragment of an equally large one for which I am indebted to the generosity of the Marchioness of Bath, it is interesting inasmuch as it shews that in the very young shell the septa are much less sinuated; I have also one about two inches in diameter in which the septa are perfectly formed. I believe they both came from Whitby.

AMMONITES Birchi.

TAB. CCLXVII.

Sp. Char. Discoid, inner whorles exposed; sides concave, armed with two involuted rows of spiniform tubercles; front rounded, transversely and obscurely sulcated; volutions 6. tubercles very numerous.

About 30 pairs of tubercles decorate each whorle, each pair is connected together by a slight elevation and the outer tubercle is the largest. The sulci upon the front sometimes continue over the sides but less distinctly. It is an essential character that the whorles do not encrease rapidly in size, consequently in a large shell they are rather numerous and its sides are not very hollow. The aperture is transverse, but very little longer than wide.

This Ammonite bears a strong resemblance to another found plentifully at Havre de Grace, in a similar clay soil but probably belonging to a different stratum, it is highly essential for Geologists to be acquainted with the characters that distinguish allied species especially when they belong to different formations. In the present instance the number of tubercles, as well as whorles, may be depended upon as sufficiently striking to prevent mistake, the French shell having only half the number of the former, and not more than 4 of the latter; the tubercles are also larger and front undulated. When several species are nearly alike a descriptive name cannot always

be found, however desirable, for each of them, I have therefore named the one now figured after Colonel Birch whose labours in search of the bones of the Ichthyosaurus have been crowned with success, and whose generous method of disposing of his collection will long be remembered. The species from Havre I propose to call *biarmatus*, in allusion to the A. armatus, tab. 95, which has but one row of spines. The figure is taken from a specimen obtained at Lyme in Dorsetshire, by Colonel Birch, who kindly lent it me previous to his sale. I have it less perfect imbedded in a scull of the Ichthyosaurus from Charmouth; and small from Craymouth, by favour of my esteemed friend James Brodie, Esq. There is often much pyrites in the solid parts of the casts that gives them a pretty metallic surface, the same circumstance is observable in the Am. biarmatus.

SPIRIFER oblatus,

TAB. CCLXVIII.

Sp. Char. Gibbose, transversely obovate, smooth, with an obtuse rather square elevation along the middle; beaks approximated.

A little wider than long, very smooth, and rounded in all its parts, the ridge that extends from the front to the beak and its corresponding concavity, are flattened in the middle. The flat part of the back is very small as well as the triangular foramen contained in it. The internal spiral appendages form two obtuse and irregular cones.

I have this species from the Mountain Limestone of Derbyshire, and Westmoreland, it seems to differ from the next only in not being quite so wide, and in being generally blunter in its contour. The largest figure is from a specimen given me by Mr. Farey, it is from Axton Quarry, S. W. of Llanasa in Flintshire.

SPIRIFER glaber.

TAB. CCLXIX.—2 *Upper Figs.*

Syn. Conch: Anomites glaber, *Martin Petr. Derb: t.* 28, *fig.* 9 *and* 10.

Nearly twice as wide as long, edge generally sharp, in other respects exactly resembling the last.

This was sent me some years ago from Derbyshire, by Mr. Martin, the lesser figure is from an Irish specimen.

SPIRIFER obtusus.

TAB. CCLXIX.—2 *Lower Figs.*

Sp. Char. Gibbose, transversely oval, very obscurely striated, with an obtuse rounded elevation along the middle ; beaks rather distant.

Very much like the last but the elevated part is not flattened along the middle, but convex and the sinus at the edge is deeper, the beak of the lower valve is also more produced ; the width is full double the length.

Sent me from Scaliber, near Settle in Yorkshire ; by Mr. John Ducket.

SPIRIFER striatus.

TAB. CCLXXI.

Syn. Conch. Anomites striata, *Martin Petr. Derb. tab. 23.* Terebratula striata, *Sowerby Linn. Trans. XII. part 2, p. 515, t. 28. f. 1. & 2.*

The small numerous unequal sulci, the wide but not deep back and the angular sinus in the front distinguish this from every other Spirifer. The back extends the whole width of the shell and makes the sides pointed, it is slightly striated; the beaks are incurved but not long.

As Mr. Martin observes, this is common in Derbyshire, I have received it also from near Cork, through the kindnes of two or three friends. The only indication I have been lucky enough to meet with of the internal structure, has been obtained by cutting off one side as shewn in the figures.

SPIRIFER pinquis.

TAB. CCLXXI.

Sp. Char. Gibbose, transversely obovate, with a straight back, longitudinally sulcated, elevated in the middle; sulci eight or nine on each side, and one in the centre of the elevated ridge.

The canal in the lower valve corresponding to the central elevation in the upper is free from sulci and near the

beak deep and very distinct. The hinge line is rather shorter than the shell is wide and is not very deep. The roundness of the spaces between the sulci and the bluntness of the edges give a kind of plumpness to the general contour from which it is named.

P. O'Kelly, Esq. has favoured me with several specimens of this Spirifer from the Black Rock, Ireland. It is a very distinct and apparently new species.

TROCHUS concavus.

TAB. CCLXXII.—*Fig.* 1.

Spec. Char. Conical, smooth; base carinated; volutions concave above, convex below; margin and base striated.

Somewhat related to the British Trochus Ziziphinus, but taller, smoother, and having the upper half of each whorl concave, the other half being concealed; the edge is obtuse, faintly marked with elevated striæ; the striæ upon the base are strongest towards its centre; aperture rhomboidal; umbilicus closed.

Found in the Crag of Suffolk, by Professor Sedgwick; the shell is very tender, and still retains much of its original pearly lustre beneath its opaque coat.

TROCHUS imbricatus.

TAB. CCLXXII.—*Figs.* 3 *and* 4.

Spec. Char. Pyramidal, with several transverse threads upon each whorl, crossed by fine longitudinal striæ, whorls angular, imbricating, flat above, very convex beneath.

Almost half as tall again as wide: the angular shape of the volutions gives the spire the form of a screw; the base is very convex, and striated in the same manner as the rest of the shell; umbilicus closed.

Found in clay near Cheltenham by Miss E. Warne, to whom I am indebted for the only specimen I have seen.

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TROCHUS reticulatus.

TAB. CCLXXII.—*Fig.* 2.

Spec. Char. Conical, transversely reticulato-striated; whorls bicarinated; base convex.

The upper carina is more acute than the other and is placed half way between it and the upper edge of each whorl; the numerous transverse elevated striæ are connected by rather less elevated, short ones, which are slightly curved; the aperture is obtusely 4 angled; about as high as wide; umbilicus closed.

One figure represents a neat specimen of this Trochus, the shell of which is converted into sparry carbonate of Lime and filled with marle; the other is from a cast of the inside, also marle not much indurated; they are both placed in the Woodwardian Collection by Professor Sedgwick, who found them at Ringstead Bay, near Weymouth, in the Kimmeridge Clay, and observed the same species at Portland Ferry in the same formation. An analogous species, with finer, and punctated rather than retiform striæ occurs in Limestone at Garsington near Oxford.

HELICINA expansa.

TAB. CCLXXIII.---*Figs.* 1, 2, *and* 3.

Spec. Char. Carinated; above, depressed, conical, obscurely striated; beneath, ventricose; callus expanded.

A nearly smooth shell, the whorls of which are flat above, but very gibbose below an obtuse distinct carina. The callus which terminates the columella is considerably expanded over the base of the shell; aperture quadrangular.

Found in the Blue Lyas of Lyme in Dorsetshire: it seems to be a rare species, as Mr. De la Beche, to whom I am indebted for the use of the specimen figured, has but one individual: it is in good preservation, in an indurated Marle, which fills it, but does not adhere strongly to the surface: the shell is converted into calcarious spar.

HELICINA solarioides.

TAB. CCLXXIII.---*Fig.* 4.

Spec. Char. Subdiscoid, obtusely carinated; whorls depressed above, convex beneath.

This is very similar to the last, but is a much shorter shell: the callus is less spread and more convex, and the carina not so distinct: it is also obscurely striated.

Is it possible that this is the young of the preceding? Its carina being more obtuse rather militates against that idea. I know not what part of England it was found in: it is in a similar Marle with the preceding.

FUSUS acuminatus.

TAB. CCLXXIV.---*Figs.* 1, 2, *and* 3.

Spec. Char. Elongated, acicular, obscurely costated, and longitudinally striated; volutions tumid, with 8 or 10 elevated striæ.

Syn. Murex porrectus. *Brander, f.* 36.

The costæ upon this species, if costæ they can be called, are very slightly elevated, and very irregular; so much so that some parts of the shell appear entirely free from them: it is so much elongated as to be 6 or 7 times the length of its greatest width.

FUSUS asper.

TAB. CCLXXIV.---*Figs.* 4, 5, 6, *and* 7.

Spec. Char. Elongated, costated; volutions tumid; costæ decussated by 4 or 5 elevated, rather acutely knotted, striæ or ridges.

A much shorter shell than the last, and less strongly striated lengthwise; the ridges rise into sharpish elevations as they cross the costæ, which are most remarkable on the upper whorls: five times as long as broad.

This species is generally whiter than the others.

FUSUS rugosus.

TAB. CCLXXIV. *Figs.* 8, *and* 9.

Spec. Char. Elongated, subcancellated, with many prominent costæ; volutions tumid, with about 8 elevated striæ upon each.

Syn. Murex porrectus. *Brander, f.* 35.
Fusus rugosus. *La Marck, Env. de Paris,* 56.

This is distinguished from the last by the greater number of its ridges, and rounder and more prominent costæ: it has also a rough appearance, free from the sharpness that characterizes F. asper. The longitudinal striæ are fine, sharp, and numerous. The length five times the width.

Fig. 9 exhibits a variety, in which there is a greater space between the third and fourth ridges than the remainder; in other respects it does not appear to differ.

I have all these species from Hordle Cliff, either by favour of Miss Dent, Miss Teed, Miss Beaminster, or the Rev. Mr. Iremonger; and through the kindness of Professor Sedgwick I have been enabled to consult the Woodwardian collection, and thus by comparing numerous specimens, to establish them. It does not appear that there are intermediate varieties.

MYTILUS Antiquorum.
TAB. CCLXXV.---*Figs.* 1, 2, *and* 3.

Spec. Char. Elongated, ovate, rather gibbose, smooth, straight; beaks obtuse, nearly close; hinge toothed.

A slight swelling opposite the hinge renders the two sides of the shell more similar than they are in the common Muscle; and the general roundness of its form also serves to distinguish it; the teeth in the hinge close to the beaks are very distinct, they are generally four, but vary in number. The length is rather more than twice the width.

I have received this shell from several Friends who have found it at Woodbridge, Ipswich, and in other parts of the Suffolk Crag. The most complete suite of specimens was lent me by Professor Sedgwick, some of which I have figured. The younger individuals possess a considerable degree of transparency; they are all so brittle that whole ones are seldom obtained.

MYTILUS alæformis.
TAB. CCLXXV.---*Fig.* 4.

Spec. Char. Obovate, with an acuminated beak, curved, depressed, smooth, with teeth in the hinge.

The edge is sharp; it forms a very regular curve from the pointed beak round to the deeply indented side opposite the hinge: there are three teeth under the beak.

A single valve only of this muscle has come into my hands, for which I am indebted to Mrs. Cobbold, who found it at their delightful retreat, Holywells, near Ipswich. It seems to be a rare species.

The resemblance of both these to recent species is remarkable; and we think the latter want more discrimination than has hitherto been bestowed upon them even by the most judicious: it is also highly interesting to enquire into the peculiarities of other shells of the Crag formation which so often accurately correspond with the recent species.

ARCA Branderi.

TAB. CCLXXVI.---*Figs.* 1 *and* 2.

SPEC. CHAR. Transversely elongated, rhombic, gibbose, finely decussated; beaks distant; longitudinal striæ strongest; teeth numerous; edge internally entire.

ABOVE twice as wide as long: the hinge line is long and straight, terminated at each end by an angle that almost forms an ear: from the beak proceeds an obtuse ridge towards the front of the longer side; the space between the beaks is plain except three or four impressed striæ, which are nearer perpendicular than usual.

I have seen several specimens of this Arc from Barton Cliff, but cannot refer it to any species before described, nor do I think it has been found in France. The shell represented at fig. 2, is in the Woodwardian collection at Cambridge, the other was given me by Miss Beaminster; it is by no means common; I have named it in commemoration of Brander, whose exquisite plates of Hampshire fossils will ever be admired.

ARCA appendiculata.

TAB. CCLXXVI.—*Fig.* 3.

SPEC. CHAR. Transversely elongated, rhombic, gibbose, decussated; beaks rather distant; two oblong appendages upon the space between the beaks; edge toothed within.

STRONGLY resembling the last, but wider; the longitudinal ridges are not deeply cut by the lines of growth, they

are often furcate; but the most remarkable character is the oblong pointed appendage to each valve upon the space beneath the beaks extending the whole length of the shorter side; the teeth are not very numerous.

The only specimens I know of this curious shell are in the collection of Miss Dent, who found them at Barton, and has kindly allowed me to figure them.

TEREBRATULA Mantiæ.

TAB. CCLXXVII.---*Fig.* 1.

SPEC. CHAR. Depressed, subtrigonous; with 16 angular plaits, half of them, on one side, elevated; upper valve convex.

NEARLY an equilateral triangle, with the front rounded; the beak prominent, and but slightly incurved.

Collected in Ireland by Mrs. Mant.* It appears to be from the Mountain Limestone.

TEREBRATULA obliqua.

TAB. CCLXXVII.---*Fig.* 2.

SPEC. CHAR. Depressed, transversely obovate, with 15 angular plaits, the 5 central ones obliquely elevated from one side; beak prominent.

A SMALL Terebratula, remarkable for the form of the front, on one side of which about five plaits are turned downwards; then the first of the five central plaits is suddenly elevated considerably, the next rather less, and so on less and less, until the last is scarcely higher than the remaining lateral ones, which are not quite so low as those on the other side.

Found in the Chalk at Ramsgate.

TEREBRATULA inconstans.

TAB. CCLXXVII.---*Figs.* 3 *and* 4.

SPEC. CHAR. Globose, with about 26 angular plaits, half of them, on one side, elevated; beak incurved.

A REMARKABLY globose shell when full grown, one half of the edge is turned up, the other down, but indifferently

* The scientific Lady of the Rev. Dr. Mant, Lord Bishop of Killaloe.

the right or left, a circumstance I have not observed in other species; the beak is so much incurved as almost to touch the upper valve, the internal appendages to the hinge appear to be short and obtuse, but I am not certain that I have seen them perfect.

Not uncommon near Oxford in Clay, which is often sufficiently soft to be washed away and shew the inside of the valves, but in general very much broken. At Ringstead Bay and Weymouth Ferry it occurs more perfect, as I learn from specimens lent me by Professor Sedgwick and Mr. De la Beche. They are in Marl, sometimes indurated, which according to the Professor belongs to the Kimmeridge Clay formation.

Fig. 3, represents a more depressed shell, found in Marle, at Gunton in Suffolk; its inferior size, with the same disposition of its plaits, and equally incurved beak, lead me to think it is only the young of the T. inconstans.

TEREBRATULA dimidiata.

TAB. CCLXXVII.---*Fig. 5.*

Spec. Char. Transversely obovate, subdepressed, with a projecting beak, plaited; upper valve convex; plaits about 30, half of which, on one side, are elevated.

Beak nearly straight, and the width greater than the length. These characters distinguish this from T. inconstans, fig. 4; the straight beak distinguishes it from fig. 3.

This is a siliceous cast, in which the Calcedony has assumed the form of concentric rings. It is from Halldown.

TROCHUS Gibsi.

TAB. CCLXXVIII.—*Fig.* 1.

Spec. Char. Conical, short, umbilicated; sides straight; edge obtusely carinated; base convex, reticulato-striated; in the centre of the upper part of the whorls is an elevated band crossed by curved striæ; aperture rhomboidal.

This shell is wider than it is high: the upper part is smooth, except the concentric band, upon which are semicircular striæ, indicating a sinus in the outer lip. The umbilicus is large, and nearly smooth; and although the inner lip of the mouth is a little reflected over the columella, which is thin, it has no tendency to close it.

A cast in pyritiferous Clay mixed with Sand; found at Folkstone. This and several other shells, hitherto called Trochi, with the band around the spire, may more properly belong to the genus Pleurotomaria, which I may be induced at some future period to adopt. I have named this after Mr. Gibs, well known for many years as a worthy assistant to several collections of British shells.

1827. 3 XLI.

TROCHUS extensus.

TAB. CCLXXVIII.—*Figs.* 2 *and* 3.

Spec. Char. Depressed, conical; above rugged, obliquely striated; beneath convex, smooth; base expanded, with a broad undulated thin margin; aperture oblong; umbilicus not plicated, closed when old.

Nearly twice as wide as high: the upper part of each whorl is irregularly undulated, and elevated in the middle into an angular ridge, which is more or less conspicuous in different individuals: the umbilicus is large and nearly smooth: it is sometimes covered over.

This Trochus in many respects resembles Trochus Benettiæ*; but although I have many specimens, none of them have attached shells or stones to themselves: one indeed has two or three oysters adhering to it; but from their position over the spire, it is evident that they were not picked up by the Trochus. The umbilicus distinguishes the species.

Fig. 2 represents a specimen filled with Pyrites, found in the Cliff at the Isle of Sheppy. The remaining figures were found in the Highgate Tunnel in 1811: they are filled with indurated Marl: we do not know how far they may extend their shells, but the lower figure seems extravagant.

* Vol. I. p. 224. tab. 98.

OSTREA pulchra.

TAB. CCLXXIX.

Spec. Char. Orbicular, depressed; one valve nearly flat, with a short incurved beak; the other valve convex, with numerous radiating undulations; beak short; hinge line straight; laminæ thin, close pressed.

For an Oyster this is a very regular shell: it nearly resembles that variety of O. edulis, commonly known by the epithet Native, but it wants the ears so often observable in it, and which give it a square form. In general the pulchra is a deeper shell. Ostrea edulina of De Lamarck (Animaux sans Vertèbres VI. 218.) appears to have more elongated beaks, but I have not seen specimens.

A great abundance of this species of Oyster is deposited in some of the gravelly strata above the Chalk near Bromley in Kent. I consider it to be distinct from the one somewhat similar, but less regular, so plentiful near the Church at Charlton, which I shall take some future opportunity of figuring, when I can compare it with some others. The acknowledged difficulty of distinguishing the species of this genius cannot be hastily surmounted. The smaller figure is selected from many individuals found at Plaistow, and presented to me by the son of Sir John Lubbock; the other was given me by Dr. Menish, it is from the top of the hill in the pleasure grounds of Claud Scott, Esq. at Bromley.

AMMONITES Bechei.

TAB. CCLXXX.

Spec. Char. Gibbose, umbilicate, radiated and concentrically striated, each side furnished with two rows of numerous small tubercles; radii numerous, thin; front rounded; aperture large.

The aperture is as wide as long, and occupies half the diameter of the shell; the sides between the rows of tubercles are slightly flattened, the inner row is the highest; the radii are nearly straight, about two to each tubercle, and sometimes one between the tubercles; the umbilicus is deep, but not very large; the striæ are very regular, elevated, and numerous.

The specimen before us is in the collection of Mr. De La Beche, whose name I have given to it, as a memorial of a stanch and generous friend to science: he obtained it from the Blue Lyas at Lyme. I have seen an Ammonite with larger tubercles, fewer radii and different formed whorls, more resembling Am. Henleyi, tab. 172, but still I think distinct from both: had the specimen been sufficiently perfect I should have been glad to have given a figure next to this. It is from the sand beneath the inferior Oolite near Cropredy, and belongs to the Oxford Museum, presented by the Rev. W. D. Conybeare.

PINNA lanceolata.

TAB. CCLXXXI.

Spec. Char. Lanceolate, slightly curved, longitudinally striated, section quadrangular.

An extremely elongated Pinna, being nearly four times as long as broad; each valve is divided into two flat parts by a line along the middle, but whether this be the natural form, or the result of a fracture, as is commonly the case in other Pinnæ, I am not certain: the curvature is very regular, and the shell in other respects appears very perfect.

The Rev. John Juland has been so kind as to lend me this remarkable and I believe very rare shell; it was found in Ochracious Limestone near Scarborough.

MYTILUS pectinatus.

TAB. CCLXXXII.

Spec. Char. Quadrangular, oblong, gibbose, longitudinally striated; slightly curved; beaks produced; front straight.

The striæ are rather deep, very regular and increasing in number as they approach towards the front. The surface of each valve is rather square, in consequence of two obtuse ridges proceeding from the angles of the front.

Not uncommon near Weymouth, where it occurs in the Kimmeridge Clay. The larger specimens were lent me by Prof. Sedgewick; the smaller by the Rev. John Juland.

CARDIUM angustatum.

TAB. CCLXXXIII.—*Fig.* 2.

Spec. Char. Transversely elongated, thin, rather depressed; costæ 27; margin toothed; anterior side truncate, posterior rounded.

In the front of this Cardium there is commonly a slight depression or sinus, from which the anterior side is rather produced; the costæ are rounded, and roughened by transverse striæ, in decay they appear to be hollow. The length equals about two-thirds the width.

By no means an uncommon shell in the Suffolk and Norfolk Crag, yet not formerly noticed: I have received it from Alderton near Woodbridge, by favour of the Rev. G. R. Leathes and Prof. Sedgewick: I have also found it at Bramerton near Norwich.

CARDIUM edulina.

TAB. CCLXXXIII.—*Fig.* 3.

Spec. Char. Nearly orbicular, convex, slightly oblique, thick; costæ 18, rugose; anterior side slightly truncated.

Different from the C. edule, for which it is sometimes taken, in the form of the anterior side, which is not

cuneated; it is consequently much less oblique: it is also rather shorter in proportion.

Extremely common in Crag at Bramerton, Ipswich, Woodbridge, &c. where it is usually much rounded by attrition.

Fig. 1 represents Cardium edule in a half petrifyed state, from St. Austle in Cornwall: it serves to shew the difference of form between edule and edulina.

AMPULLARIA. *La Marck.*

Gen. Char. Shell univalve, ventricose, subglobose, with a projecting spire; base umbilicated; aperture oblong, entire, with no thickening on the left lip.

In the shells of this genus the last whorl is, as La Marck observes, at least four times as large as the preceding, which gives the ventricose form to the whole. The recent species are inhabitants of rivers in warm climates, and are covered with a polished, generally greenish, epidermis, no vestige of which is to be traced in the otherways well preserved fossil species. La Marck and his followers are inclined to establish a distinct genus for these fossils, because they were probably marine shells, as they accompany other marine genera: the want of an epidermis might serve as one of the characters; the lower part of the mouth being somewhat reflected (versant) would form another.

AMPULLARIA acuta.

TAB. CCLXXXIV.—*Three Upper Figures.*

Spec. Char. Ventricose, smooth, with a small acute spire; umbilicus half closed, small; aperture ovate, elongated.

Syn. Amp. acuta. *La Marck Env. de Paris*, 147.
Helix mutabilis. *Brander, figs.* 58 *and* 59.

This shell is much longer than wide, although the spire does not exceed one-fourth of the length: the umbilicus is most generally only half covered by the left lip of the mouth, but La Marck observes it is sometimes quite covered: the mouth is twice as long as wide, acute at the upper angle, and slightly curved on the body of the shell: below it is rounded with a depressed, nearly reflected edge: the left lip is entire.

Sent me from near Christchurch by my old friend the Rev. Mr. Iremonger long since, and lately by Miss Beminster.

1824. 3 L.

AMPULLARIA patula.

TAB. CCLXXXIV.—*Two Middle Figures.*

Spec. Char. Ventricose, smooth, with a short spire; umbilicus large, open, lined with a spiral, adpressed, plate; aperture obovate.

Syn. Amp. patula. *La Marck Env. de Paris,* 148.
Helix mutabilis. *Brander, fig.* 57.

Length and breadth equal; the spire very short; the upper part of each whorl is sometimes a little depressed; the umbilicus is large, and only very partially closed by the left edge of the mouth, from the lower part of which branches out a corrugated lamina, that is applied close to the surface, and forms a spiral lining to the umbilicus: the mouth obovate, not much longer than wide, otherways resembling that of the last.

This species was given me by Lady Burgoine: it does not appear to be so common as either of the others upon this plate. Her Ladyship picked it up at Barton.

AMPULLARIA sigaretina.

TAB. CCLXXXIV.---*Two Lower Figures.*

Spec. Char. Ventricose, short, with a small acute spire, and sharp, longitudinal, striæ; umbilicus covered, small, half filled by a spiral lamina; aperture suborbicular, right lip enlarged.

Syn. Ampullaria sigaretina. *La Marck Env. de Paris,* 148.

More ventricose than the last, being wider than long, but with a more elevated spire: the mouth is sometimes even shorter than wide, in consequence of the right lip being greatly produced: the left lip is divided as in A. patula, and part of it ascends the umbilicus, which it nearly fills, but it only lines half of its surface; the other portion closes the umbilicus. The lines of growth are generally somewhat regularly elevated, forming rather distant, sharp striæ, which seldom happens in the other species.

Miss Salisbury and another Friend have sent this from Hampshire: it also occurs in the Bognor Rocks. It does not appear to have been before observed as British, but it is as common near Paris as the preceding species are.

HELICINA polita.

TAB. CCLXXXV.

Spec. Char. Subdiscoid, polished; spire elevated, acute; volutions marked with an impressed band, depressed above, below ventricose; callus thin, expanded; aperture nearly square.

The short conical spire of this shell is rather concave on the sides, in consequence of the upper parts of the whorls being rather hollow: the lower part of the last whorl is separated from the spire by an impressed band, upon which the lines of growth are seen arched the reverse way, indicating a sinus in the right lip; the left lip of the mouth is reflected a considerable way over the base of the columella, forming in young shells a prominent callus, but in old ones it is pressed beneath the surface of the shell, leaving the columella, however, thickened. The height is about two-thirds the diameter.

So variable are the characters of the shells possessing the sinus in the lip, indicated by the band around the whorl, some possessing those of Trochus, others those of Helicina, as the present, and H. expansa, t. 273, &c. that we can hardly assign limits to the genus Pleurotomaria; it might even be shewn to be necessary to form two generæ.

The shell before us is from the sandy stone between the Lyas clay and the iron-shot Oolite: it was discovered by the Rev. W. D. Conybeare, in the neighbourhood of Cropredy.

SERAPHS. *Montfort.*

Gen. Char. A convoluted, elongated, univalved, shell; spire internal, concealed; base truncated; mouth longitudinal, extending to the apex of the spire; lip sharp; columella smooth.

Montfort has taken the only species known bearing the above characters from the Genus Terebellum in which La Marck had placed it, and we think, justly ranked it as a type of a new Genus. It is distinguished from Terebellum, by the wholly internal spire, otherways the narrow form of the mouth which is almost linear above and broad below with a truncated base, and the general shape of the shell bring them very near together.

There are at least two species found at Grignon, one of them is longitudinally ribbed.

SERAPHS convolutus.

TAB. CCLXXXVI.

Spec. Char. Subcylindrical; apex obtuse; base truncated; the surface even.

Syn. Bulla sopita. *Brander fig.* 29 *a.* Bulla volutata *ib. fig.* 75.

Terebellum convolutum, *La Marck Env. de Paris p.* 21.

Seraphs convolutus. *Montfort, II.* 375.

A Subcylindrical shell which tapers a little towards each end, it is very smooth, nearly white, and in some French specimens mottled with light fawn colour;

apex obtuse; base, but not the columella, rather obliquely truncated; columella taper, gently curved inwards; right lip entire above, pressed against the preceding whorl and wholly concealing the spire, the apex of which appears a mere hollow point; the length is rather more than three times the greatest width.

An extremely fragile, but by no means uncommon, shell, in the clay upon the Hampshire coast and in the neighbourhood of Paris. At Grignon it is found much larger than my figures, but rarely. The largest English specimen I have seen enriches the cabinet of Miss Dent; the next in size that of Lady Burgoine; two collections which have become very serviceable towards compleating a knowledge of Hampshire fossils.

I have followed the French authors in quoting both of Brander's figures, although I suspect he had the two shells given in this and the following plate; but I believe we have no means left now of determining this point, or which is which, if he had both.

TEREBELLUM. *La Marck.*

Gen. Char. A convoluted, elongated, univalved, shell, spire exposed; base truncated; mouth longitudinal, plain, narrow above, broader below, with a sinus near the base.

The genus Terebellum was constituted by La Marck, who gave Linneus's *Bulla Terebellum* for the type, with the specific name *subulatum*: with this the above Gen. Char. will agree, to the exclusion of Seraphs. In Terebellum subulatum the spire is acute, and the upper edges of the whorls pass very obliquely round it, accompanied by a linear canal connected with the upper angle of the mouth: the surface is polished and destitute of epidermis: the columella slender, and nearly straight, free from plaits or teeth: it is an inhabitant of warm seas.

TEREBELLUM fusiforme.

TAB. CCLXXXVII.

Spec. Char. Subfusiform, cylindrical, with a visible obtuse spire; aperture with an adpressed straight canal proceeding from its upper angle to the apex of the spire.

Syn. Terebellum fusiforme? *La Marck Env. de Paris, p. 22.*

The aperture, excluding the canal at its upper angle, is about three-fifths the length of the shell, and is rather broader towards its upper part than in either Seraphs convolutum or the recent Ter. subulatum. The manifest obtuse spire is marked by the very oblique upper edge

of the volutions; but the canal connected with the upper angle of the mouth, instead of following that edge as in T. subulatum, rises in a straight line to the apex. As this canal is not mentioned by La Marck in his description of T. fusiforme, and as he quotes no figure, it is with some doubt that we adopt his name while we enlarge his specific character. The position of this canal might form a foundation to establish a new genus upon, but at present that does not appear necessary. The columella is curved in the reverse direction, and more than in Seraphs, a character which will often serve to distinguish fragments of these shells from each other by: in both, the thin left lip which covers the columella is very apt to peel off, it is, although thin, rather tumid in the shell before us.

La Marck gives us no exact locality for his T. fusiforme: our's is rare: I have received it through the kindness of Lady Burgoine and Miss Beminster, who found it near Hordwell. It apparently sometimes equals in size the Seraphs. Mr. de Gerville has amongst the numerous favours for which I have to thank him, sent me two or three casts from near Valognes, that are probably of this species, as they shew the spire; but the canal from the mouth cannot be traced in any of them.

OLIVA. *Bruguiere.*

Gen. Char. A subcylindrical univalve shell, with a notched base; whorls of the spire separated by a canal; columella obliquely striated.

Of this genus there are but few species; the recent ones are inhabitants of Tropical seas; they have generally very narrow longitudinal mouths, whence the form of the shells is more or less cylindrical. This genus is distinguished from Ancilla by the plaits upon the columella, and the naked spire, whose turns are separated by a canal extending from the upper angle of the mouth: the right lip is thickened, and a corugated varix is often formed around the base of the columella: the spire is generally short but acute, and the surface of the shell polished and destitute of epidermis, because it is enveloped by the mantle of the animal.

OLIVA Branderi.

TAB. CCLXXXVIII.—*Upper Figure.*

Spec. Char. Ovate, pointed, smooth; spire prominent; last whorl convex; mouth oblong.

Syn. Voluta Ispidula. *Brander, f. 72, excl. syn.*

A regularly ovate shell, with a slightly varicose and notched base: the right lip is thickened, and the left plaited near the base. Length almost double the width.

Dr. Solander, in Brander's Hampshire Fossils, has erred in considering this to be Voluta Ispidula of Linneus; its form is totally different from any of the numerous varieties of that shell. It appears to be a rare Hampshire shell, and unknown in France. Miss Beminster favoured me with the specimen figured.

OLIVA Salisburiana.

TAB. CCLXXXVIII.---*Lower Figures.*

Spec. Char. Subfusiform, short, ventricose, smooth; mouth oblong, both lips tumid above.

The angular or fusiform shape of this will distinguish it from most of its congeners: its width is about two-thirds the length, the widest part being near the upper edge of the last turn, below which it is conical: the great thickness of the two lips at the upper angle of the mouth separates the spiral canal to some distance from the preceding whorls: the spire is short and conical.

A new species, generally confounded with V. Ispidula of Brander: the larger specimen is in the collection of Miss Salisbury, whose zeal I wish to commemorate. I have received a middling sized one from Miss Beminster, and Lady Burgoine has lent me the young state; I find the characters the same in all.

VENERICARDIA globosa.

TAB. CCLXXXIX.-*upper and middle figures.*

Spec. Char. Globose; costæ 16 to 20, carinated; carinæ tuberculated, tubercles compressed.

var. α. Rather depressed, costæ 20, tubercles distant.

var. β. Rugged, beaks prominent, costæ 16, tubercles subimbricated.

Syn. Chama sulcata. *Brander, f.* 100.

Few individuals of this species attain to three quarters of an inch in diameter; the tubercles in var α. look like little bits of the ridges pinched up, and give the whole shell a considerable degree of neatness by their regularity, while in β. they are clumsy, irregular, and often very close together, and the striæ of growth are more conspicuous also, thus it has a rugged aspect; the beaks in var α. are sometimes prominent, thus there is a transition from one variety to the other. The lunette is condate, convex, sunk beneath the beaks but very conspicuous in both varieties; the margin is deeply toothed.

This Venericardia is nearly related to *Ven. imbricata* of La Marck, but is more gibbose, much smaller, and has fewer costæ, it may possibly be *Ven. cor avium* Env. de Paris p. 223, but the hinge does not agree precisely with the description, however I have seen no specimens with that name, and no figure is quoted.

Very abundant in Barton and Hordwell Cliffs, specimens may be so chosen from the two varieties as to look like distinct species.

VENERICARDIA oblonga.

TAB. CCLXXXIX.--*Three Lower Figures.*

Spec. Char. Transversely oblong, unequal sided, subquadrangular, gibbose, with 13 knotted costæ.

Length about two-thirds the width; costæ strong, obtuse, irregularly knotted, margin strongly toothed.

Except in form this strongly resembles var. β. of the last; it is not quite so common, but I have received them both together from many Friends.

It also occurs in France, but I think has not been described.

VOLUTA costata.

TAB. CCXC.—*Figs.* 1, 2, *and* 4.

Spec. Char. Ovato-fusiform, acute, costated, striated, with about three plaits upon the columella.

Syn. Voluta costata. *Brander, f.* 45.

Above twice as long as wide, with nine costæ upon each whorl; the costæ are broad and obtuse, a little swelled at their upper ends: they are crossed by striæ that are least conspicuous about the middle of the body. The beak is short and very little curved: the columella is furnished with three folds, of which the lowest is much the largest: the mouth is very oblong, it has both lips smooth. The length of the spire is liable to variation; it generally consists of seven turns.

This is not a very common shell. The specimen, fig. 4, enriches the select cabinet of Miss Dent; it is the largest I have seen, and has the mouth well preserved. Fig. 1 represents a specimen in the possession of Miss Salisbury; the striæ upon the surface are remarkably neat. For the shorter variety, fig. 2, I am indebted to the kindness of Miss Dent: all are from Barton.

1854 3. 11.

VOLUTA Magorum.

TAB. CCXC.—*Fig.* 3.

Spec. Char. Ovato-fusiform, obtuse, costated, obscurely striated, with many plaits upon the columella.

Syn. Voluta Magorum. *Brocchi, II. 307, t. 4, f. 2.*

The spire of this Volute is longer, more oval, and blunter than that of V. costata; it has besides, 12 narrower and less prominent ribs in place of 9. The striæ are conspicuous and distant about the base, but the principal character is the number of plaits upon the columella, which rise to the top of the left lip; the lower ones are large and terminate bluntly, while the upper ones are small and irregularly interrupted.

The general outline of this shell is rounder than in V. costata, so that it might be distinguished even in imperfect specimens. I am not certain that I am correct in considering it the same as Brocchi's V. Magorum, the plaits on the columella of which differ somewhat, according to the figure, and it is described as smooth: the state of preservation is also said to be different, as it appears to be changed into spar, so it probably belongs to another formation. I have not seen a specimen. The one before us was kindly sent to me from Barton, by the Rev. Mr. Bingley; it is the only one I have seen.

FUSUS bulbiformis.

TAB. CCXCI.—*Figs.* 1 *to* 6.

Spec. Char. Ovate, ventricose, nearly smooth; spire mucronated; beak obscurely striated, gently curved.

Syn. Murex Bulbus. *Brander, f.* 54.
Fusus bulbiformis. *La Marck Env. de Paris,* 62.
var. β, has the right lip plaited within.
var. γ, spire and beak produced more than in var. α; upper part of each volution rather concave.

Syn. Murex Pyrus. *Brander, f.* 52 & 53.
var. δ, spire much produced; whorls subventricose, with a deep obtuse canal around their upper parts.

The type of this species is a short ventricose shell, with an acute, mucronated spire, and without the least concavity upon the upper parts of the whorls (fig. 4.) the left lip is thick, especially towards the upper part, and there is also a protuberance inside, near the top of the right lip, so that a narrow canal is formed at the upper angle of the mouth: the beak is a little curved, and rather broad. The variety δ at first sight has the aspect of a very distinct species, as it is much longer: it has a considerable obtuse ridge near the upper edge of each turn, produced by an encreased thickness of the shell at that part, from whence results a flatness of the body of the shell, and an obtuse canal around the spire;

this character is generally prominent in young shells, although it frequently occurs in the largest specimens, especially those of Hampshire, which exceed the French ones in size. The var. γ is intermediate between α and δ; the upper parts of its volutions are rather concave, but the body is not flattened, neither is there a distinct thickening of the shell to form a ridge as in δ: this is the most common variety in France. The plaits inside the right lip that characterize the first of La Marck's varieties are sometimes found in all the others, most commonly in young individuals whose shells have not acquired considerable thickness.

So numerous are the remains of this Fusus in the clay of Hordwell, and the New Forest in Hampshire, that I might add a long list of friends to whom I am indebted for specimens were it necessary, but its localities are already well established. It appears to be equally abundant in the analogous formation in France. It is liable to much variation in form, and in an extensive collection it would be difficult to draw a line between the several varieties, a circumstance that proves La Marck to be correct in associating Brander's two species together. The surface is liable also to some variation in degree of smoothness, some shells being striated irregularly all over, while others are only striated near the beak, and some indeed are wholly smooth. The outer surface is generally dull, the inside often beautifully polished. The figures of the several varieties are numbered upon the plate as follows.

Fig. 1, Young shell of var. γ. Fig. 2, Young shell of var. β, Fig. 4, different views of two specimens of var. α. Fig. 5 var. γ, Fig. 6. var. δ, a large specimen from the collection of Miss Dent.

FUSUS ficulneus.

TAB. CCXCI.—*Fig.* 7.

Spec. Char. Ovato-fusiform, turgid, costated; volutions subspinose above; base striated; beak twisted; columella uniplicated.

Syn. Fusus ficulneus. *Lamarck env. de Paris,* 62.

var. α, smooth, costæ subspinose above the middle, and also near the upper edge of the volutions.

var. β, covered with elevated striæ, costæ subspinose near the upper edge of the volution only.

var. γ, striæ few, costæ obscure.

Syn. Murex turgidus. *Brander,* 51.

In all the varieties the upper edge of each whorl is depressed, and upon the edge of the flat part is a row of more or less acute tubercles, which are sometimes even double; below these the surface is concave and the costæ rise: in var. α, the costæ are elevated at the edge of the concave space into more or less obtuse, short, and rather flat spines, and the lower part of the whorl and beak are striated: in var. β, the costæ are highly elevated for a considerable length without any appearance of spines or even tubercles; they are also crossed by numerous strong elevated lines, which are thickened as they pass over them: the third variety has similar striæ but not so numerous, and the costæ in it are often very obscure; the spire is acute in all, and the proportions the same; the width is about three-fourths the length.

The var. γ, is the only one I have seen British: var. β, is not I think described by any Author; I have one specimen only of it, and am ignorant of its exact locality: var. α, and specimens approaching the others, are not rare at Grignon. Some of the English specimens are very like var. β, while others have hardly any appearance of costæ, except upon the spire; these latter are most properly what Brander has called Murex turgidus. I am indebted to Miss Teed and another Friend for the series by which I have been enabled to trace the connection with the French varieties; they are from Hordwell Cliff.

AMMONITES triplicatus.

TAB. CCXCII. & TAB. CCXCIII.--*Fig.* 4.

Spec. Char. Discoid; volutions exposed, costated; costæ large, equal to the spaces between them, each divided into three as it passes over the front; aperture suborbicular.

This Ammonite has five or six volutions, across the latter of which there are two or three rather oblique, deep, furrows, or contractions of the whorl, probably formed by a thickening of the lip at several periods of growth, an occurrence that is rather rare in the genus, and has even been adopted as a generic character.* The costæ are nearly straight and equally elevated upon the sides; they are very regularly divided into three narrow ribs, as they pass over the rounded front. The cast of the inside differs from the outside in being plain along the middle of the front. The diameter is nearly four times its greatest thickness.

Sent me by Mr. Crawford, jun. from near Malton, in Yorkshire, where he found it in the Pisolite formation. Tab. 293, fig. 4. represents a part of another specimen found by myself some years ago at Shotover, near Oxford, in a marly Limestone containing much sand, probably the Calciferous Grit, a stratum contiguous to the above.

* See Montfort, p. 79, Genus Planulites; and p. 87, Ellipsolites; also Mineral Conchology, tab. 32, Ellipsolites funatus: and v. 2, p. 189 Am. constrictus. The genus Ellipsolites must certainly be abolished, and its species ranged under Ammonites, the oval form being quite accidental.

AMMONITES biplex.

TAB. CCXCIII.—*Figs.* 1 *and* 2.

Spec. Char. Discoid; volutions exposed, costated: costæ numerous, small, split over the front; sides depressed, aperture oblong.

Volutions five or six, the numerous costæ are nearly straight, elevated and obtuse, a little before it passes over the front each is divided into two branches, equally thick with the undivided rib; the oblong aperture is narrowest near the front which is round; the external and internal surfaces do not differ.

This Ammonite occurs in a mixture of Clay with Septaria and Clalk Boulders, that extends over a great part of Suffolk. Fig. 2 is from Barrow, given me by Mr. Barnes, of Norwich.

AMMONITES rotundus.

TAB. CCXCIII.—*Fig.* 3.

Spec. Char. Discoid; volutions exposed, costated; costæ thick, numerous, split over the front; aperture orbicular.

From the small piece I possess of this I am not able to make a very full description, but there is enough to distinguish it from the last; the costæ are less numerous, much thicker, shorter and not so regularly divided into two over the front, in a short fragment some are not divided others are split into three; the sides of the whorls are not compressed, on the contrary they are rather ventricose, so that the aperture is orbicular, except a small sinus produced by the preceding whorl.

From Purbeck, probably found in the Kimmeridge Clay.

AMMONITES decipiens.

TAB.—CCXCIV.

Spec. Char. Discoid, depressed; volutions exposed, costated; costæ large, obscure towards the front; front covered by numerous small ribs; aperture oblong.

Four or five volutions compose small specimens of this shell, they are compressed on the sides and round in front; the numerous large costæ are much elevated to-

wards the centre, and almost disappear near the edge of each whorl, where smaller ridges commence; there are about five small ridges to each of the large ones. Upon the outer whorls of large shells, the smaller ridges are wanting, so that fragments of the same individual appear like distinct species, whence I have named it *decipiens*.

This is found in the same kind of Clay as A. biplex, and, like it, often forms the nucleus of a Septarium. I have part of a very large one from Pakefield, near Lowestoft in Suffolk, given to me by my old botanical Friend, Dawson Turner, Esq. The fragments figured are from the inside of a decomposing Septarium, and are in such a state that they frequently break straight through instead of in the direction of the septa of the Shell. They are from the North side of Highgate Hill.

ISOCARDIA. La Marck.

Gen. Char. An equivalved cordiform bivalve, with distant involute beaks; teeth of the hinge two, compressed, one of them curved under the beak; one lateral tooth extended beneath the lunette; ligament external, anteriorly furcated.

In several positions the shells of this genus present a cordiform outline, because they are generally very gibbose, and the notch in which the hinge is imbedded is very large; the incurved beaks assist greatly in distinguishing them when the hinge teeth cannot be examined, as is often the case in fossils. Chama Cor of Linneus is the type of the genus.

ISOCARDIA minima.

TAB. CCXCV.—*Fig.* 1.

Spec. Char. Globose, subdeltoid; anteriorly slightly truncated, posteriorly flattened; cordate.

The flat heartshaped posterior side of this shell distinguishes it from Isocardia Cor which otherways it resembles except in size, being much smaller, the anterior side is sharply produced a little way and slightly truncated.

I have only met with casts of this shell which do not exhibit the hinge teeth, and are besides rather rugged, but no better are likely to be found. I am indebted to Mr. Salmon for them; they were collected in Wiltshire, probably in the Cornbrash Limestone. I have similar ones from Madagascar.

ISOCARDIA tener.

TAB. CCXCV.—*Fig.* 2.

Spec. Char. Obovate, with produced beaks; anteriorly subtruncated, posteriorly rounded; shell very thin, smooth.

An elegant thin shell, rather wider than long, with a straightish front; it is less gibbose than the last, and the

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posterior side is more convex; bounding the anterior side is a slight ridge marked near the edge with bent striæ and projecting a little beyond it; the shell is so thin that it cannot be separated from the stone so as to shew the hinge, although it is so well preserved that the cartilage remains.

From Kelloways, by favour of Mr. Salmon, and the Rev. Mr. Steinhauer. The middle figure is from a cast in yellowish carbonate of Lime, somewhat transparent, from the same place.

ISOCARDIA rostrata.

TAB. CCXCV.—*Fig.* 3.

Spec. Char. Deltoid, ventricose; anterior side produced, pointed; posterior depressed, rounded.

Remarkably ventricose, especially towards the front, which is rather straight and terminated at the anterior side by a short beak. About the size of a large hazle nut.

Two or three specimens which are only casts of this Isocardia in Limestone, were sent me with some other shells from the Coteswold Hill in Gloucestershire, by Mr. Taylor, in the year 1816. I have waited in vain thus long (5 years) for more perfect specimens, and therefore figure these such as they are, they may serve to Identify the species.

ISOCARDIA sulcata.

TAB. CCXCV.—*Fig.* 4.

Spec. Char. Orbicular, deeper than wide, longitudinally sulcated, pearly; beaks remote.

A pretty little pearly shell, the beaks are much incurved with a considerable cordate cavity beneath them; the sulci are numerous and broad.

Only a single individual has been found in the canal at Islington, in the London Clay; it is much impregnated with Pyrites, so I fear will soon be lost, but I am not willing it should be quite forgotten.

VENUS varicosa.

TAB. CCXCVI.—*Figs.* 1 *and* 2.

Spec. Char. Subglobose, with projecting beaks, transversely furrowed; two longitudinal varicose ridges within each valve.

Not remarkable for any thing but the furrows that occur along the middle of the specimens, all of which are casts, in a light coloured limestone: the furrows are two upon each valve, one of them much larger than the other, and terminated before it reaches the edge by a deep hollow: corresponding ridges must have existed inside the shell, but whether they were visible externally cannot now be discovered: the concentric furrows that are strongly marked upon some specimens would seem to indicate a thin shell. It is nearly globose, but not so deep as long: the line of the hinge is two-thirds as long as the shell, and nearly straight; other characters of the hinge are not discoverable: the beaks are much incurved.

From Felmarsham, by favour of my good Friends Miss Ludlow, H. Goodhall, Esq. and the Rev. Thomas Oliver Marsh; the characteristic furrows are somewhat variable, the lesser being often very indistinct.

Miss Benett has kindly sent me many specimens of a large Venus from the Portland Limestone, in some of which there are similar furrows; they are less regular, shorter, and more lateral. As I hope to meet with the outside of this species, (I have fragments at present,) I postpone figuring it; in the mean time I may fairly expect to gain some further information respecting that

before us. There has been found by mr. Gerville, at Golleville, and several other places near Valognes, a gaping shell, in many of the casts of which there are also similar furrows, but still less constant and less regular. The inconstancy of the furrows in these would lead us to suspect they arise from some disease or accident attending the growth or situation of the shell, similar perhaps to the formation of pearls.

CARDITA margaritacea.

TAB. CCXCVII.---*Figs.* 1, 2, *and* 3.

Spec. Char. Transversely obovate, gibbose, with an obscure longitudinal keel and several small ridges, concentrically undulated, pearly within; anterior side slightly produced, posterior very short, convex.

The only pearly Cardita with which I am acquainted: it is a thin rugged shell somewhat wider than long, the anterior side probably gapes a little; the beaks are prominent, much incurved, and have a considerable hollow beneath them; the posterior side is distinguished from the rest of the shell, by an obtuse keel or angle; the longitudinal ridges are very variable in number, they are crossed by rugged undulations and lines of growth.

A shell characteristic of the lower part of the London Clay. I have it from a well dug on the top of Richmond Hill, where it was brought up from the depth of 265 feet. Fig. 1 represents a very perfect specimen from Bogwell Bay, in the Isle of Thanet, given me by the late lamented Lady Wilson; Fig. 2 was given me by Mr. Sutton, who obtained it at Brentford. Fig. 3 is from a specimen collected in the dark coloured (London) Clay, next to the red Clay in Alum Bay, on the Isle of Wight, by Abraham Clarke, Esq. of Carisbrooke; they are all extremely tender, and variously compressed; some are mixed with Pyrites.

Fig. 4 is taken from a fragment of an analogous shell, too imperfect to draw up a specific character from, but evidently differing in the great size and angular form of the longitudinal ridges; it is a cast in clay coated with Pyrites, and was found with Ammonites in the blue Bind between the Inver Brora Coal and the coarse Limestone above it near Clyne in Sutherland, by Mr. Farey, Senior.

ROSTELLARIA macroptera.

TAB. CCXCVIII. CCXCIX. CCC.

Spec. Char. Fusiform, smooth; lip large, nearly circular, with a canal extended along the spire, beak straight pointed.

var. β. has a sinus in the upper part of the lip. Tab. 299.

Syn. Strombus amplus, *Brander*, 76.

Rostellaria macroptera, *La Marck. env. de Paris.* 48.

Hippocrenes macropterus, *Montfort, v.* 2, *p.* 523.

In the young state this shell is highly polished, fusiform, with an acute elongated spire whose sides are nearly straight and base concentrically grooved; as it advances the left lip is considerably thickened and the right lip expands until it extends the whole length of the spire, and exceeds in width half the length of the shell; when full grown the two lips together form at their upper junction a long canal that is variously bent over or around the apex of the spire; towards its upper part the left lip projects considerably over the other, covering and often almost concealing the canal beneath it, and then is again reflected towards the spire; the beak projects beyond the lip forming a narrow pointed canal; in perfect shells the last whorl is gibbose and the furrows upon its lower part concealed. In some specimens there is a deep sinus in the upper part of the large lip, separating it from the canal upon the spire; this is the character of var. β see tab. 299.

This magnificent shell has long been a favorite amongst collectors, but its fibrous structure renders it so fragile that it is very seldom found perfect, fragments and young individuals are very common at Hordwell, as well as in the cotemporaneous formation near Paris. It has also been found at Highgate, see tab. 30, sometimes imbedded in septaria. The variety β is by no means common, I have seen but one good specimen of it; it enhances the value of a fine collection of Hordwell Fossils belonging to my kind Friend Miss Dent, along with that from which the large figure upon tab. 298 is taken. The sinus in the lip of this variety is the more curious, since such an occurrence when constant would form a generic character as in Pleurotoma.

Tab. 298 shews the young state at fig. 1, 2, and 3; fig. 4 is from a fragment exhibiting a back view of the reflected canal, and the dotted outline indicates the size of the largest specimen in Miss Beminster's collection. Tab. 300 is from one kindly lent me by the Rev. John Ireland,* in it the canal is not reflected over the spire. As the shell grows old it increases more in thickness than in size, therefore it is not fair to judge, as Montfort would do, of the size by the comparative thickness of fragments, for the lips of full grown shells are often very thin. The var β might be confounded with Rostellaria Columbaria, of which I have given a figure among my miscellaneous plates, which will often be found useful for references, but the canal and winglike lip are very different in form and proportion: in R. columbaria the lip is narrowest at the lower part and rather triangular, and the canal perfectly simple, free from the additional swelling described above; it is also a much smaller shell.

* This Gentleman's name has formerly been erroneously given JULAND, for which I beg to apologize.

CONUS. *Linn.*

GEN. CHAR. Univalve, convoluted, inversely conical; spire short, composed of the upper edges of the whorls; aperture longitudinal, narrow, toothless, with parallel sides.

THE form of most of the species of this Genus is an elongated cone, from whose base proceeds the spire, itself more or less conical, and either simple or coronated, generally much shorter than the remainder of the shell, although sometimes quite as long; the aperture is nearly equal in width through its whole length, but rendered more freely open at the ends by a kind of truncation at the base, and a deep sinus at the upper part of the right lip; the left lip is hardly visible, except at the base of the columella, where it forms a small plait. The surface is often variously ornamented by a beautiful variety of colours, striæ, punctums, &c. The animal has two antennæ, and a small operculum, and the shell is enclosed in a membranous epidermis.

The recent Cones are inhabitants of tropical seas; they are very handsome, and highly valued. Montfort has separated those with coronated spires, to form his genus Rhombus, a division which appears to be too minute; some of the other abstractions he has made may prove more useful.

CONUS Dormitor.—TAB. CCCI.

SPEC. CHAR. Short fusiform, transversely striated, striæ elevated, the intermediate spaces neatly crenulated.

SYN. Conus dormitor, *Brander*, 24.

THE length of the spire is about equal to the greatest width of the shell, the aperture is rather longer, but these proportions are liable to slight variation as shewn in figure 3; the elevated striæ are rather numerous and sometimes placed in pairs, the crenulations between them are conformable to the lines of growth; the right lip is semicircular.

I have been favoured with specimens of this Cone found at Muddiford, by Lady Burgoyne; I have also received it from Barton, through the kindness of Miss Dent, and several other Friends. It occurs frequently in a high state of preservation.

Fig. 1 exhibits a young shell with a peculiar smooth band; I conceive however that it is only a variety. Fig. 2, gives the general appearance, the middle figure is

remarkable for size. Fig. 4 is inserted to give an idea of the crenulations between the striæ.

CONUS concinnus.—TAB. CCCII.—*Fig.* 2.

Spec. Char. Fusiform, angular in the middle, spire ornamented with knobs and granulated striæ; base produced, sulcated.

This elegant Cone is nearly three times as long as broad, the spire occupying little more than one third of the length; both ends are pointed; the sulci upon the base are deepest towards the point.

From Highgate Hill, and Barton; not very common.

TAB. CCCII.—*Fig.* 1.

As it is not likely we shall again have so good an opportunity of searching the clay of Highgate Hill, as was afforded by cutting the road through it in 1811, I have thought it adviseable to figure a very much corroded and imperfect Cone found there, without being able to give a satisfactory character or name to it. It is not impossible that it may be a very large specimen of C. concinnus, but the canal around the spire, and its shorter form, render it doubtful: there are obscure indications of tubercles or large crenulations upon the spire: I cannot refer it to any species described by Lamarck or Brocchi.

CONUS scabriculus.—TAB. CCCIII.

Spec. Char. Fusiform, rather short, striated; striæ elevated, toothed.

var. β, elongated, striæ numerous, minutely toothed, (fig. 2.)

Syn. Conus scabriculus. *Brander*, 21.

The greatest width in α is rather less than half the length: in var. β it is only one-third: the striæ vary from 7 to 21; when few, each consists of a series of large, sharp, compressed teeth, in proportion as they are fewer they are more elevated, and the teeth are smaller; the last whorl is rather swelled out of the regular conical form; the aperture is longer than the spire; the right lip is sometimes plaited at the edge, opposite the teeth in the striæ, and the left lip is not visible.

A common shell at Barton. I am indebted to Miss Salisbury for several specimens.

MUREX interruptus.

TAB. CCCIV.

SPEC. CHAR. Subturrited; body covered by broad, transverse sulci; the remaining whorls smooth with two sulci along their upper edges.

SYN. Murex interruptus, *Pilkington, in Trans. Linn. Soc. VII. p.* 117 *t.* 11, *f.* 5.

SHELL about twice as long as wide; a broad flat space runs along the smaller whorls, above it are two sharp furrows; the last whorl in full grown individuals is quite covered with furrows, which are broader than in the other whorls, it is also convex, the right lip is plaited within, the left so thin that it receives the impression of the sulci beneath it and so becomes striated; the beak is elongated and slightly curved.

One of the varieties of this shell was first published by Mr. Pilkington, who discovered it in a collection of Hampshire fossil shells made by I. T. Swainson, Esq.; others have since been noticed at Barton by Lady Burgoyne, from whose choice cabinet the specimens fig. 1 are taken; I have since received it from Miss Beminster, and an unknown Friend; in the specimens from these latter persons the band does not extend so far down the spire as in those collected by Lady Burgoyne, (see fig. 2.)

I have no hesitation in pronouncing them to be the same as Mr. Pilkington's shell although Miss Beaminster's specimen is nearly three times as long; the specimen at fig. 2, is intermediate, and the smallest of Lady Burgoyne's corresponds exactly.

INOCERAMUS concentricus.

TAB. CCCV.

Spec. Char. Unequalvalved, ovate, one of the beaks much produced, incurved.

Syn. Inoceramus concentricus. *Parkinson in Trans. Geol. Soc. vol. V. p.* 58. *t.* 1. *f.* 4.
Birostrina lævis. *Jean André De Luc, M.S.*

One of the valves of this shell is rather deeper than the other, and has an acute, produced, incurved beak; the beak of the other is very short; both are transversely striated and undulated; the striæ are the edges of distant imbricated plates; the length is nearly double the width: the hinge is straight, containing about a dozen grooves for the reception of the ligament: the shell is composed of two coats, the outer brownish and of a fibrous structure, the inner pearly. There is apparently no sinus for the passage of a Byssus.

Found abundantly in the dark coloured blue Marl at Folkstone, and also in blue Marl of a lighter colour near Lewes in Sussex. Figures 1, 2, and 3, shew portions of the hinge.

Miss Curtis was so kind as to favor me in 1813 with the first specimen in which I saw the hinge; I have not since seen better, and should have figured it long ago, but did not wish to be too precipitate. It was found at Folkstone.

I defer giving the characters of the Genus Inoceramus, until I figure the species found in Chalk, which I have named Cuvieri, in a paper read before the Linnean Society in 1814. I must observe however, that it differs from Perna in not having a sinus for the passage of a Byssus.

INOCERAMUS sulcatus.

TAB. CCCVI.

SPEC. CHAR. Unequalvalved, oblong with prominent beaks, and about 9 large, longitudinal, plaits; beak of one valve incurved, acute.

SYN. Inoceramus sulcatus. *Parkinson in Trans. Geol. Soc. vol. V. p. 59. t. 1. f. 5.*
Birostrina costata. *De Luc, MS.*

IN general form this resembles the last, but it is rather shorter and more spatulate: it has also fewer crenulations in the hinge: the angular folds resembling those of Ostrea Crista Galli are a sufficiently remarkable distinction.

Equally abundant with the last, at Folkstone: it has also been found near Lewes in Sussex. Mr. Jean André De Luc, of Geneva, has good specimens of both, collected at Folkstone by himself in 1797; but as he had not seen the hinge, he was induced to name the genus under which he placed them, from the beaks; and in 1820 was so kind as to send me sketches of them named as above quoted: should the inequality of the valves prove a generic character, to distinguish them from Inoceramus,* or should Mr. De Luc's name have been given prior to 1814, it will be right to retain it, and also his specific names, if they have been published.

Figures 1, 2, 3, 4, and 7, are from Folkstone specimens: fig. 5 is from Lewes, collected by G. A. Mantell, Esq.: fig. 6 is from a clay cast found at Clophill in Bedfordshire: similar ones are said also to be found in the Campton and Southill Marl-pits, and near Beadlow in the same county, above the Woburn Sand.

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* The Inoceramus Cuvieri, the type of the genus, is probably an equalvalved shell, as I have been led to suspect by some good specimens I have lately examined.

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ERRATA.

Page 1, line 1, for "cornea" read "corneus."
3, line 1, "obscura" read "obscurus."
4, line 1, "laminata" read "laminatus."
13, "arcuata" read "arcuatus."
5, line 11, "rigida" read "rigidus."
11, line 9 from the bottom, "TRIGONA" read "TRIGONIA"
18, line 13, and last but one "Parkham" read "Parham."
27, line 1, "alæformis" read "aliformis."
4 from the bottom, "Parkham" read "Parham."
46, line 1, "V. scripta" read V-scripta."
line 22, "5" read "4."
75, line 3, from the bottom "T. O. Marsh, Esq." read "the Rev. T. O. Marsh."
78, line 14, "radi" read "radii."
81, line 1, "gygantea" read "gigantea."
87, line 1, "cuneata" read "Scalprum" Unfortunately the name cuneata had been previously applied to another Modiola, see tab. 211.
89, line 24, "I do not know they" read "I do not know that they."
93, line 1, "alæformis" read "aliformis."
125, line 2, "CCLXXI" read "CCLXX."
18, "pinquis" read "pinguis."
132, line 6, from the bottom "Beaminster" read "Beminster."
133, line 20, "alæformis" read "aliformis."
135, line 17, "Beaminster" read "Beminster."
139, line 1, "Gibsi" read "Gibbsi" and line 3, from the bottom "Gibs" read "Gibbs.
141, line 6, from the bottom "genius" read "genus."
143, line 18, "different" read "differently."
145, line 3, and 147, last line "Juland" read "Ireland."
149, line 7 from the bottom, and 150 last line "edulina" read "edulinum."

The description of *Fusus ficulneus*, tab. 291, f. 7 was accidentally omitted, it will be found upon a separate leaf in Number 53. The Binder is requested to place it next to page 166.

A SUPPLEMENTARY INDEX
TO VOL. III.

Arranging the SHELLS *described therein, according to the several* STRATA *in which they were found imbedded, from the newest towards the oldest in the British Series.*

THE following Letter, received from my kind friend Mr. FAREY, which inclosed his manuscript of the Supplementary Index to my Third Volume, which he had kindly prepared, I beg to insert here, by way of preface to that Index.

SIR,

IF on the completion of my STRATIGRAPHICAL INDEX to your Second Volume, I had occasion to apologise to you and your Readers for delay in completing the same, I feel that I have now much greater indulgence to claim, for the very protracted appearance of the enclosed INDEX to your Third Volume: and which indulgence I trust that yourself and they will grant, on being assured, that circumstances unforeseen and not within my controul, have prevented, at any earlier period since you finished printing the Volume, my giving that very careful, and I may say laborious attention, to the compiling of this Index, which I had determined to bestow upon it, and which now the same has had.

IT is to me a subject of the deepest regret, that since the period when I compiled the Index to your Second Volume, only one more Number (the 4th) of "Strata Identified by Organised Fossils," has appeared, from the pen of my greatly respected and very ill-used friend Mr. WILLIAM SMITH; and, that besides the three remaining Numbers of this work, the second part of his "Stratigraphical System of Organised Fossils," is also yet unpublished.

FOR want of my being able to consult the latter part of Mr. Smith's Catalogue and Arrangement of Organised Fossils, and for want of knowing the localities, whence his specimens in the British Museum were obtained, with regard to all those parts of the British Series of Strata which lay below the Marlstone, I have experienced considerable difficulties, and have been in much doubt in several instances, whilst compiling the present Index; suffice it to say, that I have spared no pains to do my best, towards presenting a correct and useful arrangement of the Shells of this volume.

ALTHOUGH I was by no means first in discovering the important *truth*, that particular and definable species or varieties of Shells or other organic Remains, are peculiar to, and not elsewhere found (fossil or living), but in certain beds or definable portions (as to thickness) of the Strata of the Earth, yet I believe myself to have been the first to *publish*, and the most steady and consistent of any one else in maintaining this doctrine, so replete with interest, and so fertile in consequences deducible from it, both of a theoretic and a practical kind: and my chief endeavours herein have been directed, not to the bringing forwards individual cases, wherein the doctrine appears to be supported; that task I leave to yourself and others, whom many of my cotemporaries will be disposed to think more impartial evidences, and who are performing this task as effectually as I could wish; but to the pointing out, as I have done at some length in Vol. 53, p. 112, 120, &c. of Dr. Tilloch's "Philosophical Magazine," as many as possible of those instances, in which at present, Shells passing under the same name, appear from their localities, as probably referable to more than one Stratum each: with my earnest request, which I beg here to repeat, that observers and collectors of shells in different parts of the country, would direct their particular attention to the shells in this list, (of which an abstract is given in page 243 of your second volume, and some additions thereto which I now present,) and send up for your inspection, as many individuals as possible, and well authenticated as to localities, for enabling you to discriminate and decide, as such accumulation of new facts might appear to warrant.

A continuation of the Table in p. 243 of Vol. II. (which was brought down to Vol. III. p. 77); particularizing such species of SHELLS, as are in the present Volume, referred to more than one STRATUM, and are in the Index which follows, distinguished by the Greek Letters α and β, unless otherwise mentioned below:

Genera. Species.	No. of Species or Varieties.	Page.
Ammonites annulatus	2	41
Bechii	2	143
Koenigi	2	113
Avicula echinata	2	75
inequivalvis, α, β & γ	3	78
Cardita margaritacea	2	175
Conularia quadrisulcata	2	107
Hippopodium ponderosum	2	91
Inoceramus sulcatus	2	184
Lutraria ovalis	2	47
Mya? literata	2	45
V-scripta, α, β & γ	3	46
Terebellum fusiforme	2	157
Terebratula inconstans	2	157

In the present volume, 179 *species* of Shells are named, besides 13 *varieties*, marked β, of Shells belonging to *the same Strata*, with their relative Shells, marked α; besides which, my recent investigations have led to the separation of 19 other varieties, on account of their belonging to *different Strata:* making thus 198 species (or varieties) belonging to distinct Strata, and which I am inclined to wish, had as many distinct names assigned them.

Doctor Tilloch, in the 46th and the 52d volumes of his Phil. Mag. did me the favour to print alphabetical tables, of the PLACES which furnished the Fossil Shells, described in your two first volumes; and I have prepared, and am now about to send to him, a like table of the PLACES, Strata and Shells of the present volume;—and wishing now again, success to MINERAL CONCHOLOGY, I remain, SIR, your obedient humble servant,

37, *Howland Street, Fitzroy Square,*
April 20, 1822. JOHN FAREY.*

* *P.S.*—Whilst my Son *John* F., assisted by his three younger Brothers, carried on under my roof, a professional concern, (that now *Joseph* F. pursues), which occasioned them to be far more extensively and widely known and corresponded with, than myself, I avoided many mistakes, by an addition to my Name, which now, since each of my Sons has a separate Residence, has become unnecessary.

Additional Localities of Shells described in this Work.

Ammonites annulatus, *tab.* 222.—Mya angulifera, *tab.* 224, *f.* 6 and 7. These have been found in Oolite at Sherborne in Dorsetshire, by Dr. W. Dansey, of Blandford.

Avicula inequivalvis, *tab.* 244.—Robinhoods' Bay, near Scarborough.

Orthocera gigantea, *tab.* 246.—Red Limestone Quarries, at Castle Espy, near Comber, in the county of Down, Ireland, James Clealand, Esq. with the following observations from Dr. Macdonnell: "The dip of "the Graywacké on which the Comber Lime rests is generally 45° or "upwards, sometimes vertical; the direction of the Graywacké is "always NW. by W ½ W. by compass. The Limestone is in beds, from "one to three feet thick, of which beds there are 15 or more, on the "sea shore, and only a little inland on the south side of *Newtown Laugh.* "This body of Lime is always somewhat salmon-coloured, and is exactly "similar, in its colour and dip, and in the petrifactions it contains, to "the great body of Lime at *Ardmagh.* Its coralline contents are very "numerous; among these I could often recognise the Basaltiform Ma-"dreporite: there are several large bivalves. Each stratum appears "to differ in some respects from the others, in texture, thickness, "and fossils: they lie all strictly parallel, and never conformable with "the Graywacké."

Productus Scoticus, *tab.* 69, *f.* 3.—Castle Espy, Js. Clealand, Esq.

Other Localities are inserted in the Supplementary Index.

A Stratigraphical List of STRATA, SHELLS, and PLACES; *BY MR. JOHN FAREY.*

ALLUVIA, or water-moved ruins of Strata: diluvial masses or patches.

	Tab.	
Ammonites biplex	203, f. 1 and 2.	Barrow (in Lond. Clay?)
decipiens	294,	Pakefield Gravel-pit (in L C. Septarium?)
Modiola imbricata	212, f. 3.	Gisleham (in Cornbrash?)

COWES, or Headen Hill, Strata; containing, supposed *fresh-water beds?*

Melanea fasciata	241, f. 1.	Isle of Wight.

LONDON CLAY, upper, *blue* or septarian clay; the lower beds plastic, and mostly red and white mottled:—on Mr. *Smith's* maps, coloured *dun blue*, and in his Geological Table, numbered 1 and 2.

Ammonites decipiens	294,	Highgate NE.
Ampullaria acuta	284, *up.*	Barton, Christchurch, and near Paris.
patula	284, *mid.*	Barton, and near Paris.
sigaretina	284, *lo.*	Barton, Bognor, & nr Paris.
Arca appendiculata	276, f. 3.	Barton.
Branderi	276, f. 1 and 2.	Barton.
Cardita margaritacea β	297, f. 2.	Alum Bay and Brentford.
Conus concinnus	302, f. 2.	Barton and Highgate.
concinnus major?	302, f. 1.	Highgate.
dormitor	301,	Barton and Muddyford.
scabriculus α & β	303, f. 2.	Barton.
Corbula globosa	209, f. 3.	Highgate.
pisum	209, f. 4.	Barton and Hordwell.
revoluta α & β	209, f. 8 to 13.	Barton.
Fusus acuminatus	274, f. 1 to 3.	Hordwell.
asper	274, f. 4 to 7.	Hordwell.
bifaciatus	228,	Highgate and Barton?
bulbiformis α to δ	291, f. 1 to 6.	Barton, Brockenhurst, Hordwell, and nr Paris.
ficulneus α to γ	291, f. 7.	Barton, Grignon, and Hordwell.
rugosus	274, f. 8 and 9.	Hordwell and near Paris.
Isocardia sulcata	295, f. 4.	Islington G. J. Canal.
Melanea costata	241, f. 2.	Hordwell.
minima	241, f. 3.	Brockenhurst.
truncata	241, f. 4.	Brockenhurst.
Modiola subcarinata?	210, f. 1.	Highgate and near Paris.
Murex coronatus	280, f. 3.	Highgate.
cristatus	230, f. 1 and 2.	Highgate.
interruptus	304,	Barton.
minax	229, f. 2.	Barton, Grignon, and Highgate.
tuberosus	229, f. 1.	Highgate.
Oliva Branderi	288, *up.*	Barton.
Salisburiana	288, *lo.*	Barton.
Ostrea flabellula	253,	Barton, Emsworth-harbour, Grignon, Hordwell, and Lyndhurst.
Pecten corneus	204,	Stubbington-beach.
Rostellaria macroptera α & β	30, 298, 299, and 300.	Barton, Highgate, Hordwell, and near Paris.

	Tab.	
Seraphs convolutus	286,	Barton and Grignon.
Terebellum fusiforme α	287,	Hordwell and near Paris.
Trochus extensus	278, f. 2 and 3.	Highgate and Sheppy Isle.
Venericardia carinata	259, f. 2.	Stubbington.
deltoidea	259, f. 1.	Lyndhurst.
globosa α & β	289, *up. & mid.*	Barton and Hordwell.
oblonga	289, *lo.*	Barton and France.
Voluta costata	290, f. 1, 2, & 4.	Barton.
Magorum	290, f. 3.	Barton.

CRAG MARL, or soft irregular Limestone, superficially mixed with Alluvia.....*(light brown, No. 3.)*

Astarte planata	257,	Gunton and Roydon.
Cardium angustatum	283, f. 2.	Alderton and Bramerton.
edulinum	283, f. 3.	Bramerton, Ipswich, and Woodbridge.
Mytilus aliformis	275, f. 4.	Holywells.
antiquorum	275, f. 1 to 3.	Ipswich and Woodbridge.
Terebratula inconstans β	277, f. 3.	Gunton.
Trochus concavus	272, f. 1.	Suffolk.
Venericardia senilis	258,	Courtagnon, Harwich, and and Suffolk.
Venus turgida	256,	Ramshalt, Roydon, and Woodbridge.

LONDON Deep-Well, Woolwich, or Newbury Strata; Loams, Sands, and *Nodules** mostly of Chert.....*(light brown, No. 3 & 4.)*

Ammonites biarmatus	p. 122.	Havre de Grace.
Cardita margaritacea α	297, f. 1 and 3.	Pegwell-bay, and Richmond-park Well-bottom.
Ostrea pulchra	279,	Bromley and Plaistow.
tener	252, f. 2 and 3.	Charlton.
undulata	238, f. 2.	Farley.
——— ?	p. 141.	Charlton.

CHALK, upper, soft, flinty, of Chiltern Hills, South and North Downs, &c. (mostly *light green, No. 5.*)

Terebratula obliqua	277, f. 2.	Ramsgate.

CHALK, lower, hard, grey, flintless; Hurloch, white Cawkstone, Firestone; Dunstable NW. N. and NE.....*(deep green, No. 5.)*

CHALK MARL, Malm or Blue Marl, Holmesdale Strata: earthy or coloured Chalk, red Cawkstone, Clunch, Firestone, &c. *(white, No. 6.)*

Hamites armatus (see tab. 168)	234, f. 2.	Isle of Wight S pt.: see II. 153.
nodosus	216, f. 3.	Folkstone, NE.
plicatilis	234, f. 1.	Bishopstrow.
spiniger	216, f. 2.	Folkstone, NE.
tuberculatus	216, f. 4 and 5.	Folkstone, NE.
turgidus	216, f. 6.	Folkstone, NE.
Inoceramus concentricus	305,	Cambridge, Folkstone, NE. Lewes, N. and Malling.
sulcatus α	306, f. 1 to 5, and 7.	Cambridge, Folkstone, NE. Lewes, N. and Malling.
Trochus Gibbsi	278, f. 1.	Folkstone, NE.
Venericardia?	259, f. 3.	Ringmer.

* There are those who pretend that these are rolled or *rounded FLINTS*, notwithstanding, in some instances, these *nodules* may be cut with a knife, like semi-indurated Clay, and some appear also like indurated Chalk, internally; in shape and surface, likewise, they no way resemble rolled pebbles.

GREEN SAND, or Sandstone, chloritic? and often micaceous Sand, Fuller's-earth, Nutfield Sand, Haldon Rock...(very *light blue, No.* 6.)

	Tab.	
Ammonites Goodhalli	255, ...	Blackdown-hills.
Corbula gigantea	209, f. 5 to 7.	Blackdown.
lævigata	209, f. 1 and 2.	Blackdown.
Cucullæa carinata	207, f. 1.	Blackdown.
decussata	206, f. 3 and 4.	Faversham-field.
fibrosa.....	207, f. 2.	Blackdown.
Hamites spinulosus	216, f. 1.	Blackdown.
Pecten arcuatus α	205, f. 7.	Devises, N.
Terebratula dimidiata	277, f. 5.	Haldon (or Haledown.)
Trigonia affinis	208, f. 3.	Haldon (or Alldown.)
aliformis	215, ...	Blackdown and Parham-park.
eccentrica	208, f. 1 and 2.	Blackdown and Hembury-fort.
pennata	237, f. 6.	Teinmouth.
Turbo carinatus	240, f. 3.	

BRICK EARTH, micaceous, or blue-marl, Clay on Woburn Sand, or on Portland Rock; Marden (*Kent*) or Tetsworth Strata. (*blue green, No.* 7.)

Modiola æqualis	210, f. 2.	Parham-park.
bipartita α	210, f. 3.	Osmington and Parham-park.

PORTLAND ROCK, or 4th Oolite, Aylesbury, Wardour, Swindon, Purbeck, or Kentish-rag Limestone, part Oolite, in Sand and Marl..... (Sand, *brownish red, Nos.* 8 *and* 10, Limestone, *blue, No.* 9.)

Lutraria ovalis α	226, f. 2.	Portland Isle.
Modiola? aliformis	251, ...	Sandown.
Nerita sinuosa	217, f. 2.	Chilmark.
Ostrea expansa	238, f. 1.	Tisbury.
Meadei	252, f. 1 and 4.	Somersetshire.
Pecten lamellosus	239, ...	Chicksgrove, Portland Isle, Swindon and Thame.
Terebratula inconstans α	277, f. 4.	Oxford, SE. Portland-ferry, and Ringstead-bay.
Trigonia gibbosa α & β	235, 236, ...	Tisbury.
Trochus reticulatus	272, f. 2.	Garsington, Portland-ferry, and Ringstead-bay.
Venus (large)?	p. 173.	

OAK-TREE CLAY, blue, of Thame, Standford, &c.; nodules of stony Marl, Selenite, pyritic extr. Fossils, bituminous Marl...(*greenish blue, No.* 11.)

Ammonites rotundus.....	293, f. 3.	Purbeck Peninsula.
Inoceramus sulcatus β.....	306, ...	Beadlow, Campton, Clophill, and Southill.

CORAL RAG, and pisolite, or 3d Oolite, local in Woburn Sand; Wooton-Basset, Hedington, Pickering, &c.....(*orange, No.* 12.)

Ammonites trifidus .....292 &	293, f. 4.	New Malton and Shotover.
Lima rudis	214, f. 1.	Calne.
Mya? literata β	224, f. 1.	Scarborough, Castlefoot & NorthSands, NewMalton.
Pecten arcuatus β.....	205, f. 5.	Calne.
similis	205, f. 6.	Shotover-hill, NW.
Pinna lanceolata	281, ...	Near Scarborough.
Trochus bicarinatus	221, f. 2.	Marcham field.
Turbo muricatus α	240, f. 4.	Bagley-Wood-pit, Banner's Ash, Derry-hill, Steeple-Ashton, and Wooton-Basset.
(— β & γ)?	240, ...	Longleat park, W.

CLUNCH CLAY, or Fen Clay; of Blackmoor, Otmoor, Oxford, &c.: beds of Clunch, or dogger-stone ?..... ..(*light purple, No.* 14.)

	Tab.	
Ammonites Lamberti.....	242, f. 1 to 3.	Portland Island, NE. and Sandfoot Castle.
Leachi.....	242, f. 4.	Sandfoot Castle.
omphaloides	242, f. 5.	Portland Island, NE. and Sandfoot Castle.
Lima proboscidea	264, ...	Sandfoot Castle.
Mya? literata α	224, f. 1.	Felmersham.
Mytilus pectinatus.....	282, ...	Sandfoot Castle.

ALUM SHALE, of Whitby, Titherton, &c.; Cement Balls or Septaria, (wrongly called *Lias*) Jet, Selenite, &c. .....(*dun purple, No.* 15.)

Ammonites annulatus α	222, f. 2.	Near Whitby.
heterophyllus.....	266, ...	Near Whitby.

KELLOWAYS STONE, of Kelloways Bridge, Staiths? &c. . ....(ditto.)

Ammonites Koenigi α	263, f. 1 and 2.	Kelloways-bridge.
Avicula inequivalvis α	244, f. 2.	Kelloways-bridge.
Isocardia tener	295, f. 2.	Kelloways-bridge.
Mya V-scripta α	224, f. 3.	Kelloways-bridge, and Little Somerford.

CORNBRASH, or Bedford Limestone .....(*yellowish brown, No.* 16.)

Avicula costata γ	244, f. 1.	Near Stony Stratford.
echinata α	243, f. 1.	Chippenham, Closworth, Draycot, Langston-Herring, Lullington, Cheriton (North,) Norton, Pavingham, Sheldon, Stony Stratford, Tellisford, SW. Trowle, and Wincanton, NW. and SW.
Isocardia minima	295, f. 1.	Madagascar Isle? and Wiltshire.
Lutraria ovalis β	226, f. 1.	Felmersham.
Modiola aspera	212, f. 4.	Felmersham (Gregory's-pit)
imbricata	212, f. 1 and 3.	Felmersham and Milton-Ernest.
plicata	248, f. 1.	Felmersham.
Mya V-scripta γ	224, f. 5.	Bedford-castle.
Pecten laminatus	205, f. 4.	Chatley-lodge.
Venus varicosa	296,	Felmersham.

FOREST MARBLE, Whichwood, Collyweston, Stonesfield, Yeovil, &c.: grey Slate, Bones, Teeth, &c. .....(*light blue, No.* 18.)

Pecten Lens	205, f. 2 and 3.	Oxfordshire.
obscurus	205, f. 1.	Stonesfield.
rigidus	205, f. 8.	Castle Combe, E.

CLAY ON UPPER OOLITE, S. and E. of Bath, Bradford, &c.; Stone-beds, Corals, &c. .....(very *light yellow, No.* 19.)

Avicula costata δ	244, f. 1.	Bradford, Charterhouse-Hinton, E. and Winsley.

UPPER OOLITE, great or superior O.; oolitic, calcareous Freestone, of Bath, Ketton; upper Cotswolds, &c..... .....(*yellow, No.* 20.)

FULLERS-EARTH Strata, grey, lead-coloured and purple Clay; slippy soil.....(very *light orange, No.* 21.)

Modiola gibbosa.....	211, f. 2.	Ancliff, Bradford, S. and Claverton-hill.
Mya angulifera	224, f. 6 and 7.	Beacon-hill and Smallcomb.

UNDER COLITE, inferior, lower or bastard O: of Dundry, lower Cotswolds, &c.....(*reddish orange, No.* 22.)

	Tab.	
Ammonites annulatus β	222, f.1, 3 to 5.	Cropredy and Ilminster.
Browni	263, f. 4 and 5.	Dundry.
falcifer	254, f. 2.	Ilminster.
Sowerbii α & β...	213, ...	Dundry.
Strangewaysi.....	254, f. 1 and 3.	Ilminster.
Astarte excavata	233, ...	Dundry.
Cardita lunulata.....	232, f. 1 and 2.	Bayeux and Dundry.
similis	232, f. 3.	Dundry.
Cirrus Leachi.....	219, f. 3.	Dundry.
nodosus...141, f. 2. and	219, f.1, 2 & 4.	Dundry and Yeovil.
Cucullæa oblonga	206, f. 1 and 2.	Crosshands, Dundry, and Little Sodbury.
Isocardia rostrata	295, f. 3.	Cotswold-hills.
Lutraria lirata.....	225, ...	Wooton-under-edge?(query Norton-under-Hamdon.)
Melanea lineata	218, f. 1.	Dundry.
Modiola cuneata.....	211, f. 1.	Somersetshire.
reniformis.....	211, f. 3.	Near Bath.
Mya V-scripta, β	224, f. 2 and 4.	Claydon.
Nerita lævigata	217, f. 1.	Dundry.
Ostrea (fibrosa) ?	p. 66.	Normandy.
Pecten barbatus.....	231, ...	Dundry.
Trigonia duplicata.....	237, f. 4 and 5.	Little Sodbury.
striata	237, f. 1 to 3.	Dundry.
Trochus fasciatus	220, f. 1.	Dundry.
granulatus	220, f. 2.	Dundry.
ornatus.....	221, f. 1.	Dundry.
sulcatus	220, f. 3.	Dundry.
Turbo ornatus.....	240, f. 1 and 2.	Dundry.
Unio concinnus	223, f. 1 and 2.	Cropredy.

SAND and Sandstone of many colours, Northampton, Enstone, &c..... (*white, No.* 23.)

Ammonites ——— ?	p. 143.	Cropredy.
Helicina polita	285, ...	Cropredy.

MARLSTONE, Marl, &c.; of Glastonbury.....(very *light blue, No.* 24.)

BLUE MARL, above, or Clay on Lias; Cheltenham. (*light blue, No.* 25.)

Ammonites Bechei, α	280, ...	Lyme Regis.
Birchi	267, ...	Charmouth, Craymouth, and Lyme Regis.
Koenigi, β.	263, f. 3.	Charmouth.
Avicula inequivalvis, γ	244, f. 2.	Dursley.
Helicina expansa	273, f. 1 to 3.	Lyme Regis.
solarioides	273, f. 4.	Lyme Regis.
Lutraria ambigua	227, ...	——? alluvial at Narford.
Modiola scalprum	248, f. 2.	Bourton.
Plicatula spinosa	245, f. 1 to 4.	Braunston-tunnel, Crick-tunnel, France, Leonard-Stanley, and Uley.
Trochus imbricatus	272, f. 3 and 4.	Cheltenham.

BLUE LIAS, beddy, water-setting or Hydraulic Limestone: of Watchet, Aberthaw, Southam, Barrow .....(*dun blue, No.* 26.)

Avicula echinata, β.....	243, f. 2.	——?
inequivalvis, β.....	244, f. 2.	Frethern and Kelweston.
Gryphites ——— ?	p. 19.	Near Belfast?
Hippopodium ponderosum, α	250, ...	Cheltenham, W. Fenny-Compton, and Toddenham.

	Tab.	
Lima antiquata	214, f. 2.	Frethern.
Modiola Hillana	212, f. 2.	Pickeridge-hill.
minima	210, f. 5 to 7.	Near Belfast? & Taunton.

RED MARL, red ground or earth, Cheshire Strata. .....(*red, No.* 28.)
YELLOW LIMESTONE, buff, red-land, or Magnesian Limestone; Popplestone, Cornstone: Aberford, Sunderland....(*greenish blue, No.* 29.)
COAL MEASURES, carboniferous Strata; Sandstones, Crowstones, fire Clays, Coals, Ironstones; Derbyshire, Newcastle. (*Indian Ink, No.* 30.)

Ammonites ——— ?	p. 176.	Inver Brora.
Cardita ——— ?	297, f. 4.	Inver Brora.
Conularia quadrisulcata, β	260, f. 6.	Tronlie Bank.
? teres	260, f. 1 and 2.	Tronlie Bank.

DERBYSHIRE PEAK, Limestone Under-coal, Metaliferous, Basaltic, or Mountain Limestone: Kendal, Aldstone. ... (*purple blue, No.* 31.)

Ammonites Henslowi	262, ...	Scarlet Head
Conularia quadrisulcata, α	260, f. 3 to 5.	Hot-Wells&Westmoreland.
Hippopodium ponderosum, β	250, ...	Colebrook Dale.
Melanea constricta	218, f. 2.	Buxton & Tideswell (3d L.)
Modiola bipartita, β	210, f. 4.	Llantrisent.
Nautilus bilobatus	249, f. 2 and 3.	Closeburn.
complanatus	261, ...	Scarlet Head.
pentagonus	249, f. 1.	Bathgate-hills & Closeburn.
tuberculatus	249, f. 4.	Closeburn.
Orthocera cordiformis	247, ...	Closeburn & Thornlie-bank.
gigantea	246, ...	Bajarg and Closeburn.
Spirifer glaber	269, *up.*	Chelmerton, Ireland, and Tideswell, 3d L.
oblatus	268, ...	Axton-Quarry, Derbyshire, and Westmoreland.
obtusus	269, *lo.*	Scaliber.
pinguis	271, ...	Black Rock.
striatus	270, ...	Bakewell&Castleton, 1st L. and(Cork) Black Rock.
trigonalis	265, ...	Cave Dale, N. Monyash, and Overton (1st L.)
Terebratula Mantiæ	277, f. 1.	Ireland.

Note.—I have been unable to place in the above List, either T. fusiformis β, p. 158, or Venus? p. 174, for want of more *local* information.

ERRATA which have unfortunately escaped correction in the printing of the 3d Volume, in addition to the List, p. 186.

Page 3, last line, for " near Oxford" read " Oxfordshire."
41, after line 3 insert " Syn. *Lister's An. Ang. t.* 5, *var. a, Phil. Mag. Vol.* 54, *p.* 136."
47, line 11, for " Norton" read " Wooton."
67, after line 2 insert " Syn. Pecten - - - *Smith's Strat. Syst. p.* 40, *and Strata Identified, p.* 16, *and Portland Stone, plate f.* 6.
67, line 6 from the bottom, for " fifth" read " third."
78, line 9 from the bottom, for " the other figure" read " fig. 3."
82, line 17, for " Sanguar" read " Sanquar."
82, line 4 from the bottom, for " ports" read " posts."
93, line 8 from the bottom, for " Sandgate" read " Sandown."
108, line 15, " Keswick" read " Kendal."
123, line 5 from the bottom, for " 28" read " 48."
167, first line, for " triplicatus" read " trifidus," in consequence of triplicatus having been used before: the same erratum occurs in the Index.
180, line 17, for " 1 and 2" read " 1 and 3."
And in the Index, for " Murex interuptus" read " M. interruptus"; for " Trigonia excentrica" read " T. eccentrica"; and also insert " Ammonites biarmatus," page 122.

Several Errors in spelling the Names of Places are corrected in the Supplementary Index.